

NAVAL AVIATION NEWS

Soviet Naval Aviation



C. C. Cooney

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COVER—Soviet Union naval aviation is an interesting blend of land-based, V/STOL and helicopter aircraft, and aviation ships. This *Kiev*-class carrier silhouette was designed by *NANews'* Art Director, Mr. Charles Cooney.

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Naval aviation employed by the Soviet Union is the topic of an interview with the Secretary of the Navy, the Honorable John F. Lehman, Jr., who is also a Reserve Commander and A-6 NFO, page 4.



Soviet Union naval aircraft — land-based patrol, supersonic, missile-carrying, antiship, and helicopter aircraft deployed today are summarized in unclassified form beginning on page 8.



Soviet Union naval aviation ship development is still in the "embryonic stage." There are five aviation and two amphibious warfare ships afloat today, with more to come. Check them out starting on page 14.



"A Top Cat Grooms His Tigers" is about a fighter pilot who has seen a lot of changes happen in his warfare community. He's Captain Roy Cash, ComFitWing-1, with a few thoughts on the subject, page 16.



Eventually, the LPDs will be phased out and replaced with the new LHD — a variation of the familiar LHA. The LHD will be unique because it will be built to handle the new LCAC hover landing craft, page 21.



NANews' JOCS Kirby Harrison recently was selected as the Navy's Photojournalist of the Year for 1983. He has a few secrets for successful photojournalism to share with you, beginning on page 23.

STATE OF THE ART

Lessons Learned Program

The Naval Air Test Center has been tasked by the Naval Air Systems Command to establish a Naval Aviation Lessons Learned Program to review recent and future Naval Aviation procurements. It will focus on problems associated with weapons systems and related areas such as management, logistics, engineering, design and training. It is aimed at increasing reliability and reducing overall costs, and at correcting problems before weapons systems are deployed. During the preliminary design phase, NavAir provides the contractor with examples of lessons learned from related weapons systems. The contractor is required to review the lessons and recommendations, and either incorporate them or justify not using them.

P-3C Improvements

To keep the U.S. Navy in the forefront of ASW technology, the Lockheed-California Company has completed a facility to study ways to improve the entire fleet of P-3C *Orions*. The latest advancement, the IBM Proteus acoustic processing system, is being incorporated in the P-3C Update III. Lockheed recently delivered the prototype production version to the Navy for testing, and plans to begin actual production deliveries soon. In a company-funded effort, Lockheed has assembled a special mock-up of the *Orion's* fuselage outfitted with most of the equipment found on the current production models. Engineers will simulate missions on the mock-up's computer system in order to design and develop future ASW improvements.

Fiberoptic Gyroscope

A gyro with no moving parts — yes, you read it correctly — is being studied at the Naval Research Laboratory (NRL).

A team of scientists at NRL has developed and laboratory-demonstrated a low-cost, highly sensitive prototype fiberoptic gyroscope that may revolutionize the field of rotation sensors. The use of fiberoptics in rotation sensing has the potential for developing low-cost, compact instruments having no moving parts. Therefore, fiberoptic gyros could be used for high-precision air and shipboard inertial navigation and aircraft flight control. In preliminary lab tests, the NRL sensor performed almost perfectly, indicating a high-sensitivity rotation detection, low-noise level and a good long-term, zero-point stability.

F-14 TV Camera Sets

Northrop Corporation has been awarded a Navy contract to produce 81 television camera sets (TCS) for the Navy's F-14 *Tomcat*, which will bring the total number of sets to 212. TCS is a closed-circuit television system that allows pilots to make combat decisions earlier than previously possible. A television camera mounted beneath the F-14's nose finds and locks onto targets well beyond the range of the unaided eye, and displays them on monitors for the pilot and the flight officer. TCS can also be used for long-range surveillance and reconnaissance.

awards

ANA 1983 Outstanding Achievement Awards

The Association of Naval Aviation has presented its 1983 Outstanding Achievement Awards to VMO-1 for Force Support and Special Mission Aviation; Reserve Patrol Wing, Atlantic for Maritime Patrol Aviation; Crew of Coast Guard Aircraft #1482, USCG Astoria, Warrenton, Ore., for heroic actions in Helicopter Operations; and to VA-196's Lt. Brent G. Larson and Ltjg. Bradley A. Kuether for Tactical Aviation.

VAdm. Robert Goldthwaite Award

The 1983 Vice Admiral Robert Goldthwaite Award has been won by VT-26, NAS Chase Field, Texas, for excellence in training student Naval Aviators and Naval Flight Officers within the Naval Air Training Command. The award is sponsored by the Columbus Aircraft Division of North American Rockwell in honor of VAdm. Goldthwaite who made significant contributions to the training command.

Adm. John H. Towers Flight Safety Award

VT-27, based at NAS Corpus Christi, Texas, has received the 1983 Admiral John H. Towers Flight Safety Award. Vice Admiral Robert F. Schoultz, DCNO(Air Warfare), sent a message congratulating the squadron, "An honor such as this is the result of everyone pulling towards a common command goal — safe flight operations. This task was made even more difficult because of the transition to a new type aircraft. . . ." VT-27 recently transitioned from the T-28B *Trojan* to the T-34C *Mentor*. The award, which recognizes safety in the training command, honors Adm. Towers as one of Naval Aviation's foremost pioneers.

Noel Davis Trophy

Reserve squadrons VF-201, VA-305, VAK-208, VP-62, VR-56, and HS-84 are the winners of the 1983 Noel Davis competition for mobilization readiness. The winning squadrons were judged on readiness, training, safety, personnel retention and wing commander's evaluations. The award is named in honor of Lt.Cdr. Noel Davis, a pioneer Naval Reserve Aviator who was killed in a plane crash while preparing for the first New York to Paris flight — 24 days before Charles Lindbergh's successful journey.

Silver Falcon

NFO Capt. Albert Adams has been named the Association of Naval Aviation's Silver Falcon. The award is presented to the inactive Naval Reserve aviator or flight officer (Navy or Marine Corps) with the earliest date of designation. Capt. Adams was designated a naval air navigator in September 1945. He is presently on temporary duty as a special projects officer with Surface Pacific Intelligence Unit, NAB Coronado, Calif.

Flatley Awards

The 1983 Admiral Flatley Awards have been presented to *John F. Kennedy* (CV-67), *Tarawa* (LHA-1) and *Arthur B. Radford* (DD-968). The annual awards are sponsored by Rockwell International in honor of the late Admiral James H. Flatley, Jr., and recognize superior operational readiness, outstanding safety record and significant contributions to aviation safety during the preceding year.



Stop and Gone

An A-7E pilot was number two on a three-plane hop at sea. Upon return to the carrier, the lead signaled "hook down" for recovery. The Corsair driver complied but thought he was to make a touch and go prior to a trap. The carrier had been in port for six days. It was the end of a winter month and the pilot had logged 18 hours during only six flying days of the month.

The hook was down but the hook handle light was on. The section leader, concerned that number two needed a touch and go to satisfy requirements for a night flight, asked CATCC "... would you confirm that [our pilot] does not need a touch and go?" CATCC responded, "...that's a

negative — touch and go." Due to the controller's inflection and pause between "negative" and "touch and go," the reply was incorrectly construed as clearance for a touch and go. The mishap pilot, who was in ISO Utility, raised the hook handle. The light went out but the section leader, number three, observed that the hook was still down. He believed that the pilot realized he was in ISO and that he would deselect that mode accordingly to execute a touch and go.

The recovery was "zip lip" so no ball calls were made. The Corsair made the approach and snagged the number four wire. The aircraft stopped and rolled back slightly, the cable dropping free of the hook. But full power was still on! The hook appeared to stow in the up position as the A-7 moved toward the port deck edge. The pilot locked the brakes and corrected back toward the centerline, using nosewheel steering. The pilot ejected just before the attack bomber departed the angle deck and plunged into the sea. His trajectory brought him down on the edge of the angle, but an alert flight deck crew saved him from going over the side. The flyer sustained extensive injuries.



Grampaw Pettibone says:

Bust my batteries! I turned 10 shades of purple hearin' this one. Apparently, it was unclear during the brief whether the pilot was to make a touch and go. This started the problem. The misunderstanding with CATCC didn't help either. I agree that the hook light should have stayed on



when the pilot, in ISO, raised the handle. The pilot came out of ISO when he lowered gear and flaps but the hook problem remained: hook handle up, no light, but hook really down. So, there was an electrical problem. He did have a flashing approach light. Also, as best we know, the PC-2 system was OK. The problem here, plain and pure, was the pilot. His mind was dead set on a touch and go even after the cable halted his machine. He got hung up inside the cockpit with the hook handle position, kept the power on and continued to roll. "Stop and goes" are OK for helos and *Harriers*. But not A-7s on flight decks. We wasted an airplane here, folks. Add one more to Neptune's inventory.

Hide and Feather — Friend and Foe

It was dusk and the EC-130 was rolling down the AFB runway on takeoff. As the pilot rotated the nose, several deer scrambled into view attempting to cross the strip. The crew heard a thump but continued the take-off evolution and the flight. Upon landing after the mission, investigation revealed damage to the port main landing gear.

Next day, also at dusk, a second *Hercules* from the same outfit was executing the go portion of a touch and go at an East Coast air station when two of a larger number of deer traveling left to right across the runway impacted the nose landing gear. The pilots and crew drew the *Hercules*

to a halt, examined their machine, and discovered damage to both nose wheel landing doors.

An SH-2F was on a SAR swimmer jump training mission at night off the California coast. The *Seasprite* was in a 30-degree angle-of-bank turn at 60 knots, 200 feet above the water. Suddenly, the helo was in the midst of a flock of birds, one of which flew into the cockpit, struck the bulkhead above the pilot's seat and fell dead into his lap. There was no damage to the SH-2F.

At a southern air station, a *King Air* was making a touch and go when it slammed into a cow which had ambled onto the runway. The T-44's nose gear collapsed and the aircraft came to a stop 4,000 feet down the runway. The cow apparently got through a hole in the perimeter fence.



Grampaw Pettibone says:

Ole Gramps loves all creatures bright and small and a ring of bright water just as much as the next fellow. Unhappily, friends of the animal kingdom can be dangerous to aircraft and aircrew health. There ain't much we can do to predict the unpredictable behavior of stags, sparrows and the like, especially around airports with all their scary sounds and bright lights. But we can:

- Stress heads-up doctrines (aircrews).
- Strengthen animal control programs (C.O.s and airport managers).
- Read and heed "animal" warnings in FLIP pubs and submit recommended warnings accordingly (all hands).
- Mend your fences (C.O.s and airport managers).

Motley Medley

A civilian roofer was eating lunch under a tree when a helo approaching a landing pad loomed too close to the tree causing the trunk to fall on the workman, breaking his shoulder.

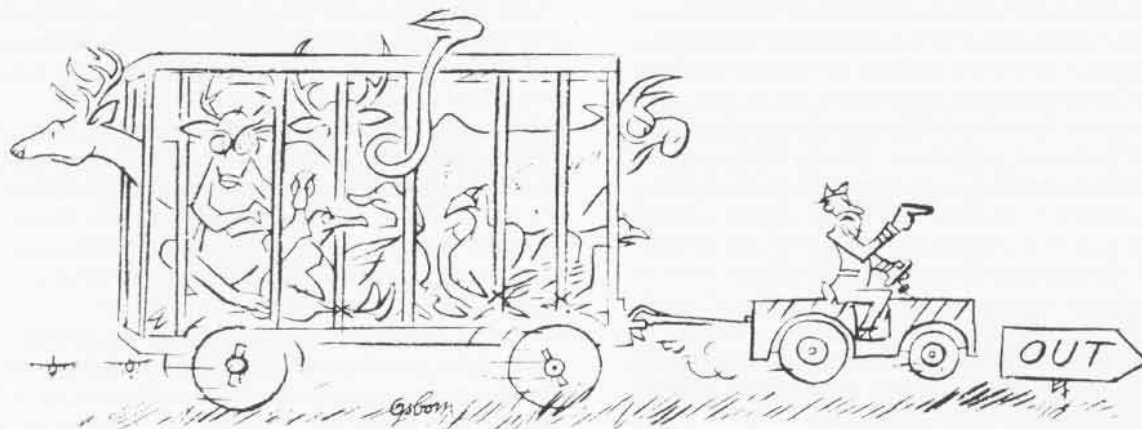
From the world of general aviation: An instructor waited under cover while his student preflighted their small aircraft in a downpour. The instructor manned up quickly and was advised by the student that the fuel tanks were full. After 45 minutes of IFR work, the instructor noted the fuel gauge needles close to the empty mark. He tapped the glass vigorously hoping the needles were stuck. They weren't. An immediate and safe return to the airport was made. What happened? The student had actuated a lever to drain a fuel sample. The lever didn't snap back into the closed position. You see, it was raining and...

The troops were working on an EA-6B. Both forward landing gear doors had been opened manually. A man fired up the hydraulic jenny, unaware that the two technicians were correcting a wiring problem in the starboard wheel well. A force of about 1,500 psi was applied to the *Prowler*. The door slammed closed, catching the technician on the right side of his face, severing his ear, and barely missing his shipmate who had just moved.



Grampaw Pettibone says:

I suppose the boys in Hollywood could make a comedy out of these tales. Sorry, Ole Gramps sees nothing but pain and unprofessionalism!





**John F. Lehman, Jr.,
Secretary of
the Navy, on**

Soviet Naval Aviation...

Left, Secretary of the Navy John F. Lehman begins two weeks of reserve duty with a requalification flight as a bombardier/navigator in a VA-42 A-6E Intruder. Opposite page, two F-14 Tomcats from VF-24 shadow a Soviet Tu-95 Bear-D.

On January 23, 1981, President Ronald Reagan announced the selection of John F. Lehman, Jr., to be Secretary of the Navy. He was confirmed by the Senate on January 29 and took the oath of office on February 5, becoming the 65th Secretary of the Navy.

Lehman is a businessman, scholar, author, and Naval Flight Officer and Commander in the Naval Reserve. He is one of the youngest men to be appointed Secretary of the Navy.

Prior to this appointment, Lehman was president of Abington Corp., a management firm that specialized in defense matters. He has been involved intimately in defense and foreign affairs since the late 1960s, when he was a staff member of the Foreign Policy Research Institute from 1967 to 1969 at the University of Pennsylvania. From 1969 to 1974, he served as special counsel and senior staff member to Dr. Henry Kissinger on the National Security Council and, from 1974 to 1975, was a delegate to the Mutual Balanced Force Reduction Negotiations in Vienna. He became deputy director of the U.S. Arms Control and Disarmament Agency in 1975, holding that position until 1977.

Lehman attended St. Joseph's College, where he earned a B.S. in International Relations in 1964. That same year, Lehman enlisted in the Air Force Reserve. He continued his education at Cambridge University

in England as an Earhart Fellow and graduated in 1967, receiving a B.A. with Honours Law and an M.A. in International Law and Diplomacy. He left the Air Force Reserve to accept a direct appointment in the rank of ensign in the Naval Reserve in January 1968. Subsequently, he was designated a Naval Flight Officer (bombardier-navigator), and promoted successively to his current rank of commander. He is assigned to Medium Attack Wing One, NAS Oceana, Va. In 1974, Lehman earned his Ph.D. in International Relations from the University of Pennsylvania. He has also been a Visiting Fellow at Johns Hopkins School of Advanced International Studies, and a Chubb Fellow at Yale.

Lehman has authored or coauthored several publications on national and international defense and foreign affairs. They include: *The Prospects for Arms Control*, ed. by J. E. Dougherty and J. F. Lehman, Jr. (1965); *Arms Control for the Late Sixties*, ed. by J. E. Dougherty and J. F. Lehman, Jr., (1967); *The Executive, Congress and Foreign Policy*, by John Lehman (1976); *Aircraft Carriers: The Real Choices*, by John Lehman (1978); and *Beyond the Salt II Failure*, by John Lehman and Seymour Weiss (1981).

He was born September 14, 1942, in Philadelphia, Pa., and is married to the former Barbara Wieland. They have three children and reside in McLean, Va.

Progressing into a New Dimension

Interview with the Honorable John F. Lehman, Jr.,
Secretary of the Navy

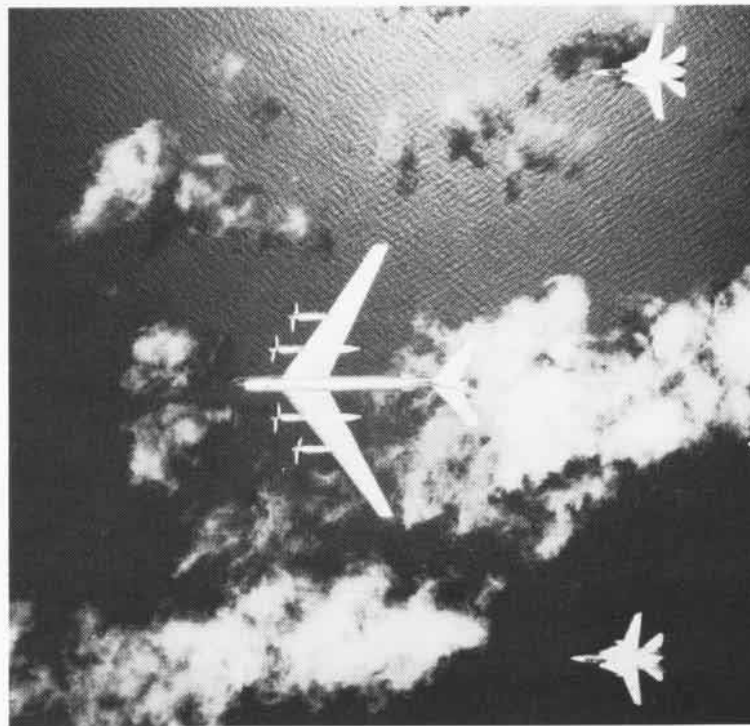
Lehman: The evolution of the Soviet Navy has been a logically consistent development along, from their point of view, very sensible lines. It is now progressing to the mature phase of interdiction capability, which requires naval operations coverage 24 hours a day. To do this, you have to have a full-scale, large-deck carrier. So, the real coming of age for the Soviet Navy will take place when their new nuclear aircraft carrier, now under construction, is operational in the early 1990s. That will provide an entirely new dimension which will complicate our own tasks. But, we're still confident that we will be able to maintain clear maritime superiority through the 1990s.

NANews: What's your overall impression of Soviet naval aviation (SNA)?

Lehman: Admiral Gorshkov described SNA as one of the two "main arms of the forces" of the Soviet Navy. SNA took two significant steps during the Brezhnev years — the introduction of a sea-based, fixed-wing capability on *Kiev*-class aircraft carriers and the introduction of the swing-wing, supersonic, antiship, missile-armed *Backfire* bomber. While SNA's sea-based capabilities can be characterized as in the embryonic stage, the Soviets nevertheless have a broad and growing appreciation of the role and utility of naval aviation.

How do you compare the state of SNA readiness to ours? It appears they don't train as much as we do, or test their weapons systems as frequently. Is this true?

The Soviet readiness to conduct operations is assessed as being very high, but the Soviet philosophy of readiness is radically different from our own. To the Soviets, it is more important to be ready to go to sea or fly your aircraft, than to actually be doing either. Consequently, their readiness posture emphasizes maintenance and ground-oriented training rather than large amounts of flight time. The goal of this readiness philosophy is to achieve a maximum force generation capability. The Soviets' readiness philosophy, however, does feature a large rate of live weapons firings and ordnance training delivery so that Soviet flight crews are well trained in the firing of their weapons systems.



What is the morale level among SNA personnel? Why is it so?

There are probably wide variations in morale among Soviet Navy components and units. Morale is likely high within most Soviet naval aviation units due to their elite status, careful personnel selection, strong group cohesion, depth of political indoctrination, heightened sense of technological challenge, improved food and general living conditions and, perhaps, possibilities for accelerated promotion.

How serious a threat is SNA to our battle groups and submarines?

SNA *Backfire* and *Blinder B* aircraft can carry modern antiship missiles (AS-4) with ranges as great as 300 nautical miles. These aircraft and weapons pose a definite threat to our surface forces when operating within range of their land bases. SNA *Bear F* aircraft are tasked with long-range antisubmarine warfare. They are equipped with sonobuoys, torpedoes and depth bombs — all for attacking submarines. Like the *Bear F*, the *Helix A* helicopter is primarily involved in antisubmarine warfare. The *Helix A* has a dipping sonar and can deliver a wide variety of ASW weapons. Within the capability of these systems they are considered a threat to our submarines. The *Kiev* carrier-based *Forger* VTOL aircraft also has an antiship strike capability but, other than visual reconnaissance, poses no real threat to the submarine.

In what ways is SNA lacking when compared to U.S. Naval Aviation?

In comparing sea-based aviation capabilities alone, the U.S. Navy has six decades of experience in carrier aviation, which includes an existing force of super-carriers with their highly specialized, high-performance

aircraft. The Soviet experience in operating fixed-wing aircraft at sea is limited. Consequently, we do not expect the new carrier and its air group to be capable of operating proficiently before the 1992-95 time frame. Unlike the U.S. Navy, however, the bulk of SNA's assets are land-based. Their missions include antiship strike, ASW, reconnaissance, electronic warfare and support. SNA has more than 1,000 aircraft, including 400 strike units, to carry out these missions.

What is known about the Soviet Union's new large deck aircraft carrier which is similar to U.S. design and still under construction? How many and what type of aircraft will it support? How much will it displace?

We believe the aircraft carrier being built at Nikolayev on the Black Sea will be nuclear-powered and have a full-length flight deck. Displacement will be about 65,000 tons. We expect the carrier to deploy with some 60 high-performance aircraft, although the exact type or model is not yet known.

What will be its mission?

The mission of the new Soviet carrier could be expected to include a number of operational assignments, such as providing tactical air defense of deployed Soviet naval and ground forces and anti-submarine warfare.

Will their future aircraft carriers have catapults and arresting gear?

Yes, we expect the new carrier will be fitted with arresting gear and steam catapults like those on U.S. aircraft carriers.



A port beam view of the Kiev-class carrier Minsk underway with four Forger VTOL Yak-36 aircraft on its flight deck.

Once the Soviets have a fully operational large-deck carrier, do you think they will turn away from constructing smaller Kiev-class carriers?

The *Kiev*, *Minsk* and their sister ships are very capable. We wouldn't mind having a few in our own fleet. They have real capability to put aircraft to sea. They can never substitute for a full conventional aircraft carrier like our own carriers, but they certainly are good augmentation and they do provide real aircraft capabilities, like the smaller British *Invincible* class, and indeed like our own LHD. You might say we have, in a sense, copied a part of the Soviet approach in our LHD-1 convertible class which will be about 40,000 tons — the same size as the *Kiev*. It will be first an amphibious ship and second a full-up VTOL/helicopter carrier. [*Kiev*-class] ships are very useful, and we don't expect to see them disappear.

Why has it taken the Soviets so long to construct a large-deck aircraft carrier? Is this just another example of the Soviets trying to copy Western design? Do you think the construction of this large-deck carrier will change the Soviets' naval strategy in any way?

Soviet naval leaders stopped "bad mouthing" aircraft carriers a number of years ago. Their new carrier represents the latest step in the evolutionary development of what Admiral Gorshkov has called a "balanced fleet" — one capable of carrying out the full range of naval tasks. As such, I think it has become increasingly obvious to the Soviet Navy leadership that protection and support of their submarine, surface and amphibious assets would be greatly enhanced with a tactical air defense and air strike capability indigenous to seaborne forces. The Soviets have undoubtedly drawn from information available on the Western navies' experience with aircraft carriers. However, while adapting key features from Western designs and capabilities, they could very well provide their carrier with unique features.

Soviet naval strategy is, for the foreseeable future, centered on prevention of U.S. ballistic submarines and other nuclear-capable forces from striking the Soviet Union and its forces, while being able to conduct interdiction of Western lifelines. In this context, the Soviets will attempt to control the seas contiguous to the USSR and conduct sea-denial operations beyond these areas. The large-deck carrier can provide an improved air-defense capability in support of this strategy. The carrier will also offer the Soviets the potential for enhanced support to maritime power projection operations against moderate opposition anywhere on the globe.

Today's Soviet aircraft carriers, like the 36,000-ton Kiev, appear to bristle with weapons when compared with our aviation ships. Are they as awesome as they appear?

The *Kiev*-class ship does possess a wide array of impressive weapons systems and capabilities. U.S. aviation ships do not normally carry the types or numbers of weapons systems found in the *Kiev*. Surface-to-surface cruise missiles (with reload capability), short-range and point defense surface-to-air missiles and a variety of guns make the *Kiev* a formidable surface combatant, while U.S. aircraft carriers rely almost exclusively on the embarked air wing and the accompanying battle group for these same types of defensive or offensive capabilities.

How does the mix of Soviet naval aircraft like the *Forger* (Yak-36) VTOL jet and *Hormone* helicopter compare to today's mix of U.S. naval aircraft?

The capabilities of the *Forger* and *Hormone* are markedly inferior to those of the high-performance aircraft in a modern U.S. Navy carrier air wing. It's important to understand, however, that seaborne aircraft are relatively new to the Soviet Navy. As such, *Forger* VTOL aircraft add a new dimension to their navy. It is the initial step in correcting a traditional weakness of that force, the ability to provide air cover and air striking power as an indigenous part of a fleet operating beyond the range of land-based aircraft. Similarly, the *Hormone* helicopter provides them with an enhanced antisubmarine warfare capability that was previously lacking.

Tu-95 *Bear* long-range patrol aircraft have been shadowing our battle groups for years. Are they used exclusively for intelligence gathering?

The Tu-95 *Bear* aircraft is primarily a reconnaissance and intelligence collection platform.

How significant is the threat posed by the Soviet Union's land-based, long-range *Backfire* bomber to our carrier battle groups? How do our battle groups counter this threat?

The *Backfire* is the newest operational strike bomber in the SNA inventory. More are entering the fleet each year. It can carry bombs, mines and technologically sophisticated anti-ship cruise missiles, and travel at supersonic speeds. Our carrier battle groups attempt to counter this threat primarily by early detection and prosecution before the *Backfire* comes within weapons' range of our forces.

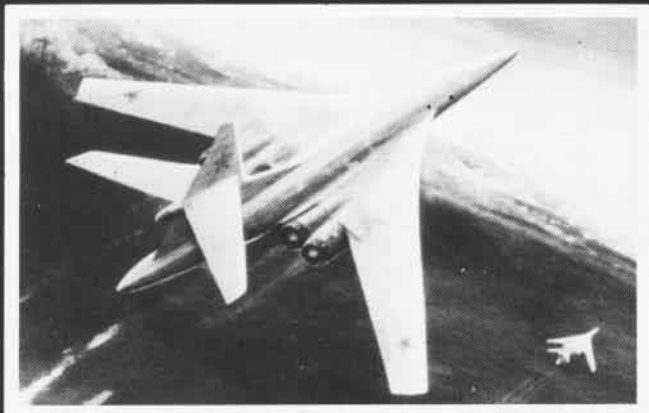
In the 1990s, how do you predict the balance will be between SNA and U.S. Naval Aviation?

I expect the U.S. Navy to maintain a substantial superiority in at-sea aviation capabilities in the 1990s. The Soviet Navy can be expected to introduce and operate a fixed-wing aircraft capability at sea in a limited capacity. They can also be expected to upgrade their land-based aircraft force. Of particular concern is the improved antiship strike capability with the highly capable *Backfire* becoming the dominant maritime strike aircraft in the SNA inventory. ■

Lehman carefully preflights a bomb rack on an A-6E Intruder before flying with VA-42.



Soviet Naval Aircraft



Fixed-Wing

Backfire-B Tu-22M (Tupolev)

Mission: Reconnaissance and ship attack

Year entered service: 1975

Max weight: 121.5 tons

Wingspan: 111 feet (85 feet fully swept)

Length: 131 feet

Engine: Two Kuznetsov NK 144 turbojets, 45,194-pound thrust each

Speed Max/Cruising: Mach 2.2 at 50,000 feet; Mach 1.3 at 3,000 feet

Operational radius: Supersonic 3,485/2,250 km with/without refueling. Subsonic: 6,300/5,320 km with/without refueling.

Armament: 2/23mm cannon, 26,455 pounds of bombs (nuclear or conventional) on external racks, 1-2 AS 4 or AS 6

Fitted with: 1 Down Beat navigation and bombing radar; 1 optical bomb sight; 1 Fan Tail tail radar; and IFF

The roots of Soviet naval aviation date as far back as 1812, when Tsar Alexander I hired a German engineer named Leppig to make a dirigible balloon to use against Napoleon's invading armies. Russian naval aviation matured by 1914, with a combined strength of more than 250 airplanes, many of which were American Curtiss flying boats. But, the Russian Revolution in 1917, followed by a succession of leaders who frowned on the production of naval aviation ships and aircraft, curbed expansion of this military program. It wasn't until Nikita S. Khrushchev came to power in March 1953 that progress resumed. Admiral Sergei Gorshkov was made head of the Navy, and the Soviets began plans to design and construct both bombers which could attack ships at long range and small deck carriers which would be heavily loaded with surface-to-surface missiles, helicopters and, later, VTOL jets.

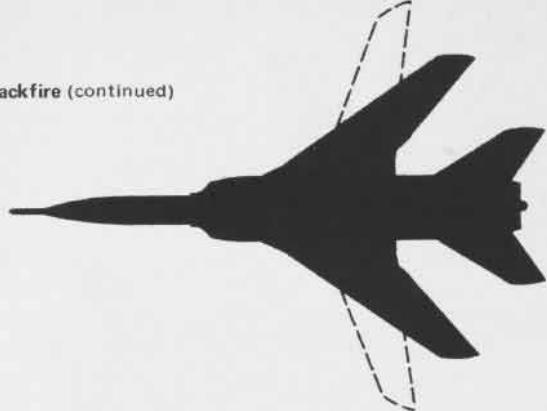
Today, Soviet naval aviation is an integral part of the Soviet navy with approximately 68,000 men, seven ships (three aircraft carriers, two helicopter cruisers, and two amphibious warfare ships), and 1,530 aircraft. Their naval aircraft operate in all four Soviet naval fleets (Northern, Baltic, Black Sea and Pacific) under the direct control of the fleet commanders.

NA News is featuring Soviet naval aviation in this issue, because of its increasing growth, sophistication and potential threat to U.S. forces deployed worldwide.

According to *Soviet Military Power 1984*, the new USSR long-range bomber, the Blackjack, is still in the flight test stage of development. It's reportedly larger and faster, and may have the same combat radius as the U.S. B-1 bomber. The Blackjack could reach operational status in 1987 and will be capable of carrying cruise missiles, bombs or a combination of the two. It will probably first replace the much less capable Bison bomber and, later, the older Bear-A bomber.



Backfire (continued)



Soviet Union Naval Aircraft

Tactical

370 strike bombers: *Backfire-B, Badger-C, G, Blinder*

95 fighters/fighter-bombers: *Forger-A, Fitter-C*

Tactical Support

75 tankers: *Badger-A*

170 reconnaissance and electronic warfare: *Bear-D, Badger-H, J, Blinder, Hormone-B*

Antisubmarine Warfare

195 fixed-wing: *Bear-F, May, Mail*

250 helicopters: *Hormone-A, Haze-A, Helix-A*

Utility

373 miscellaneous training, transport, utility helicopters, etc.



Blinder-A, C, D Tu-22 (Tupolev)

Mission: Gravity bomber, photoreconnaissance, trainer

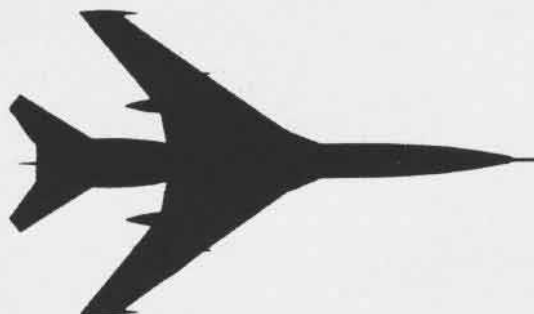
Year entered service: 1963

Max weight: 85 tons

Wingspan: 91 feet

Length: 134 feet

Engine: 2 Kolesov VD-7 turbojets, 44,092-pound thrust each (30,864-pound thrust without using afterburners)



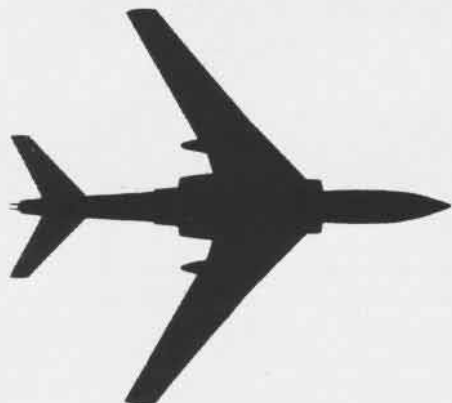
Speed Max/Cruising: Mach 1.5 at 36,000 feet

Operational radius: Supersonic speeds: 1,000 km without refueling; 1,600 km with refueling. Subsonic speeds:

1,500 km without refueling; 2,000 km with refueling.

Armament: 1/23mm cannon, 11,023 pounds of bombs

Fitted with: 1 Down Beat navigation radar; 1 Bee Hind tail radar; IFF; 7 cameras



Badger-G Tu-16 (Tupolev)

Mission: Ship attack

Year entered service: 1965

Max weight: 77 tons

Wingspan: 111 feet

Length: 118 feet

Engine: 2 RD-3M turbojets, 21,054-pound thrust each



Speed Max/Cruising: 540 knots at 22,000 feet; 445 knots at sea level

Operational radius: 3,200 km without refueling

Armament: 8/23mm cannon, 2 AS-5 *Kelt* or 2 AS-6 *Kingfish*

Fitted with: 1 Short Horn navigation and bombing radar; 1 Doppler radar; 1 Bee Hind tail radar



Bear-C,D Tu-95 and Bear-F Tu-142 (Tupolev)

Mission: Reconnaissance and electronic warfare

Year entered service: 1955

Max weight: 160 tons; *Bear-F* 171 tons

Wingspan: 157 feet; *Bear-F* 176 feet

Length: 154 feet; *Bear-F* 160 feet

Engine: 4 Kuznetsov NK-12MV turboprops, 15,000 hp each; 4-bladed contrarotating props



Speed Max/Cruising: 500 knots at 25,000 feet; 440 knots at sea level

Operational radius: 8,000 km without refueling; 9,500 km with refueling

Armament: Up to 6/23mm cannon plus 17,636 pounds of torpedoes (bombs in *Bear-F*)

Fitted with: Big Bulge A (*Bear-F* with Wet Eye) tail radar; well-equipped with electronic countermeasures



Fitter-C,D Su-20 (Sukhoi)

Mission: Ship attack

Year entered service: 1976

Max weight: 17 tons

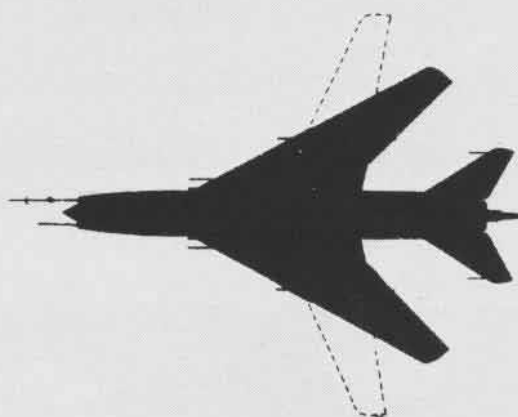
Wingspan: 45 feet; swept 34 feet

Length: 55 feet

Engine: 1/Lyulka AL-21F, 24,250-pound thrust turbojet

Speed Max/Cruising: Mach 1.8 at 50,000 feet

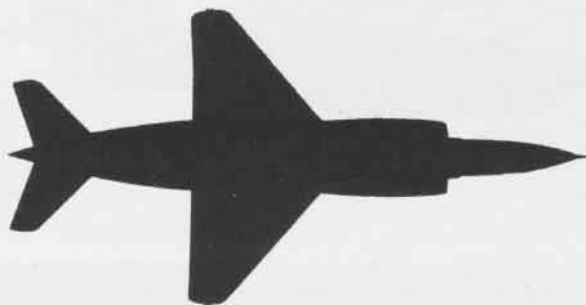
Operational radius: 220 nm low-low-low; 435 nm high-low-high



Armament: 32/57mm rockets, 2/30mm cannon, 7,716-pound bombs, nuclear or conventional

Fitted with: Ranging radar; tail warning radar; laser range finder; automatic control

Remarks: Used by Naval Air Force in Baltic area. Can also carry AA-2 *Atoil* or AA-8 *Aphid* air-to-air or AS-10 air-to-ground missiles.



Forger-A, B Yak-36 (Yakovlev)

Mission: Ship attack, day interceptor, two-seat trainer

Year entered service: 1976

Max weight: 9.9 tons

Wingspan: 22 feet

Length: 49 feet (*Forger-B* 55 feet)

Engine: 1/16,865-pound thrust main engine; 2/7,936-pound lift engines

Speed Max/Cruising: 545 knots at 36,000 feet

Operational radius: 125 nm low-low-low; 240 nm high-low-high

Armament: 16 or 32 rockets, 2/23mm cannon, 2 AS-7 or AS-10 missiles, or 2,204-pound bombs

Fitted with: Passive warning system; inertial navigation; no radar

Remarks: Vertical takeoff and landing aircraft, *Forger-B*, the two-seat training version, is also carried aboard ship. A-version can also carry 2 AA-8 air-to-air missiles.



May II-38 (Ilyushin)

Mission: ASW

Year entered service: 1969

Max weight: 68 tons

Wingspan: 121 feet

Length: 118 feet

Engine: Four turboprops, 5,200 hp each

Speed Max/Cruising: 380 knots at 30,000 feet; 315 knots at sea level

Operational radius: 3,000 km

Endurance: 12 hours

Armament: 15,432 pounds of bombs, depth charges, torpedoes

Fitted with: Radar, MAD, sonobuoys

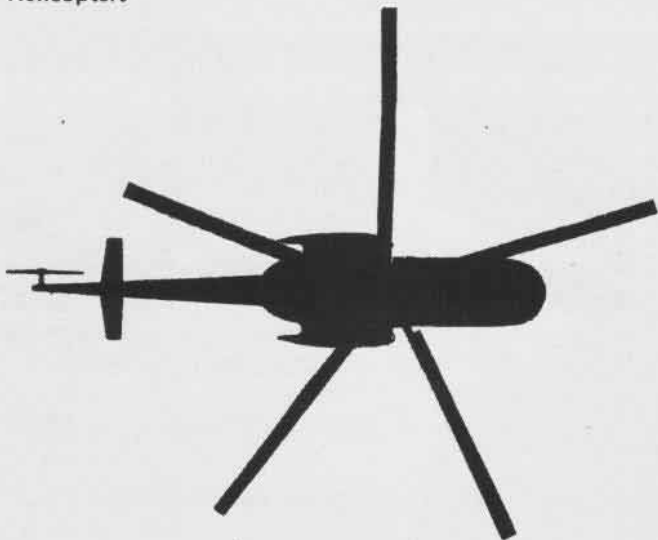


Mail Be-12 (Beriev)
 Mission: ASW
 Year entered service: 1967
 Max weight: 30 tons
 Wingspan: 95 feet
 Length: 98 feet
 Engine: 2 AL-20D turboprops, 4,190 hp each



Speed Max/Cruising: 310 knots at 30,000 feet; 240 knots at sea level
 Operational radius: 1,300 km
 Armament: Bombs, charges, mines
 Fitted with: Radar, MAD, sonobuoys
 Remarks: Amphibian, but used primarily from land

Helicopters



Haze-A Mi-14 (Mil)
 Mission: ASW
 Year entered service: 1976
 Max weight: 12 tons
 Wingspan: Rotor diameter 68 feet
 Length: 78 feet
 Engine: 2 Isotov TV-2 117A turboshafts, 1,500 hp each



Speed Max/Cruising: 140 knots; 122 knots
 Operational radius: 302 km
 Endurance: 2.5 hours
 Armament: Depth bombs and torpedoes, 4,409 pounds total
 Fitted with: Sonobuoys and dipping sonar
 Remarks: Land-based; rotors do not fold



Hormone-A,B,C Ka-25 (Kamov)

Mission: ASW, targeting, utility

Year entered service: 1967

Max weight: 7.3 tons

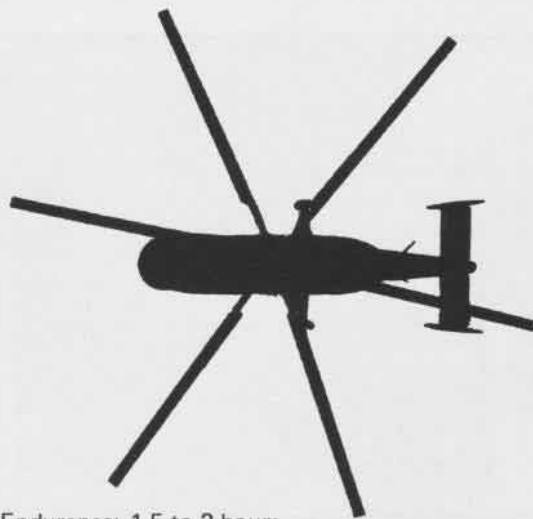
Wingspan: Rotor diameter 52 feet

Length (fuselage): 32 feet

Engine: 2 GTD-3 F turboshafts, 905 hp each

Speed Max/Cruising: 120 knots; 105 knots

Operational radius: 300 km

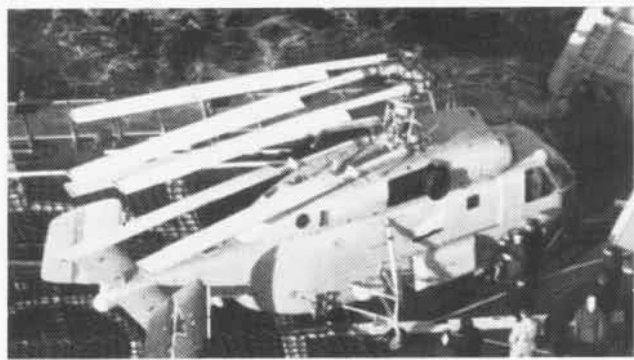


Endurance: 1.5 to 2 hours

Armament: Depth charges or torpedoes, 2,204 pounds total

Fitted with: Sonobuoys and dipping sonar

Remarks: Carried on board *Kiev*, *Moskva*, *Kara* and *Kresta* classes. The B-version has a video data link system; C-version in various utility configurations, including reconnaissance.



Helix-A Ka-27 (Kamov)

Mission: ASW

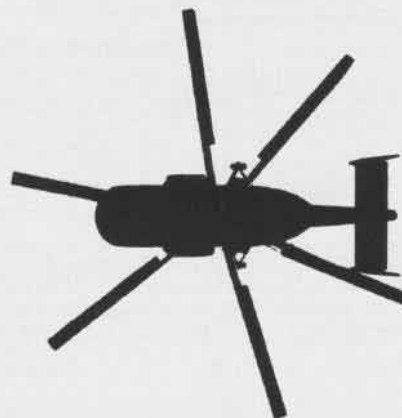
Year activated: 1981

Max weight: 8 tons

Wingspan: Rotor diameter 52 feet

Length (fuselage): 32 feet

Engine: 2 Glushkov GTD-3 F turboshafts



Speed Max/Cruising: 130 knots; 130 knots

Operational radius: 300 km

Endurance: 2 to 2.5 hours

Armament: Depth charges or 2 torpedoes

Fitted with: Sonobuoys and dipping sonar, possibly MAD

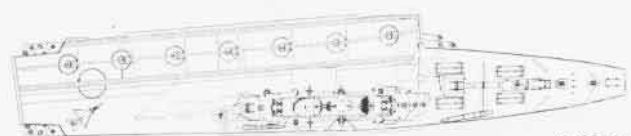
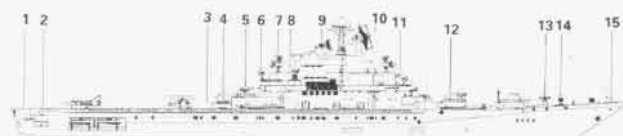
Remarks: Civil version, Ka-32, has lifted 11,023 pounds.

Silhouettes are adapted from drawings courtesy of General Dynamics and *U.S. Army Aviation Digest*. The illustrations are not to scale.



Aviation Ships of the Soviet Union

Kiev



H. Simoni

VTOL Carriers. 1. 30mm Gatling gun 2. Bass Tile radar 3. SA-N-4 system 4. Twin 76.2mm DP mount 5. SA-N-3 system 6. Owl Screech radar 7. Head Lights radar 8. Pop Group radar 9. Top Steer radar 10. Top Sail radar 11. Don-2 radar 12. Twin launchers for SS-N-12 system 13. SUW-N-1 system 14. RBU-6000 15. Trap Door radar

USSR naval personnel total more than 483,000, including 186,000 afloat, 68,000 naval aviation, 14,000 coastal defense, 15,000 naval infantry, 57,000 in training, 123,000 shore support, and approximately 20,000 civilians manning auxiliaries.

A 300-meter-long, nuclear-powered, western-style aircraft carrier of 60,000 tons full-load displacement and equipped with steam catapults and arresting gear is reported to have begun construction at the Nikolayev shipyard on the Black Sea. Completion in the near future is unlikely, with the late 1980s to 1990s being more probable, using the facilities now devoted to building the *Kiev*-class VTOL carriers.

Kiev-class Ships

There are three *Kiev*-class carriers (a fourth is under construction): *Kiev* (commissioned 1975); *Minsk* (commissioned 1978); *Novorossiysk* (commissioned 1982); and *Kharkov* (scheduled to be commissioned 1985).

Displacement: 32,000 tons

Speed: 32 knots

*Dimensions: 273.0 x 47.2 x 8.2 meters

**Armament: 8 SS-N-12 (II x 4, 24 missiles); 2 SA-N-3 systems (II x 2, 72 *Goblet* missiles); 2 SA-N-4 systems (II x 2, 40 missiles — not in *Novorossiysk*); 4/76.2mm DP (II x 2); 8/30mm Gatling AA (VI x 8); 10/533mm TT (V x 2); 1 SUW-N-1 ASW RL (II x 1); 2 RBU-6000 ASW RL (XII x 2); 14-17 *Hormone-A* or *Helix-A* and *Hormone-B* helicopters and 12-13 *Forger-A, B* VTOL aircraft

Electronic Equipment:

Radar: 1 Don Kay, 2 Don-2, 1 Top Sail, 1 Top Steer, 2 Head Lights, 2 Pop Group, 2 Owl Screech, 4 Bass Tilt, 1 Trap Door, (*Novorossiysk*: 3 Palm Frond vice Don Kay, Don-2)

Sonar: 1 low freq., hull-mounted; 1 med. freq., towed VDS

ECM: 8 Side Globe (not in *Novorossiysk*), 4 Top Hat A, 4 Top Hat B, 4 Rum Tub, 2 Bell Clout; 2 chaff RL (II x 2)

Machinery: 4 sets of geared turbines; 4 props; 200,000 hp

Boilers: 8; Fuel: 7,000 tons

***Range: 4,000/31; 13,500/18

Complement: 1,200

Moskva-class Helicopter Cruisers

There are two *Moskva*-class cruisers: *Moskva* (activated 1967); *Leningrad* (activated 1968).

Displacement: 14,500 tons

*Dimensions: 189.0 x 34.1 (flight deck) x 7.7

Speed: 30 knots

**Armament: 2 SA-N-3 systems (II x 2; 44 *Goblet* missiles); 4/57mm AA (II x 2); 1 SUW-N-1 ASW RL; 2 RBU 6000 ASW RL; 14 *Hormone-A, B, C* helicopters

Electronic Equipment:

Radar: 3 Don-2, 1 Top Sail, 1 Head Net-C, 2 Head Lights, 2 Moff Cob

ECM: 8 Side Globe, 2 Top Hat, 8 misc. Bell-series, 2 chaff RL (II x 2)

Sonar: 1 LF hull-mounted, 1 MF VDS

Machinery: 2 sets geared turbines; 2 props; 100,000 hp

Boilers: 4

***Range: 4,500/29; 14,000/12

Complement: 850 total

Ivan Rogov-class Amphibious Warfare Ships:

There are two *Ivan Rogov*-class ships: *Ivan Rogov* (commissioned 1978); *Aleksandr Nikolayev* (1982).

Displacement: 11,000 tons

Speed: 23 knots

*Dimensions: 158.0 x 24.0 x 8.2 meters

**Armament: 1 SA-N-4 SAM system (II x 1, 20 missiles); 2/76.2mm DP (II x 1); 4/30mm Gatling AA (VI x 4); 1/122mm automatic bombardment RL (XL x 1) for BM-21 rockets; 4 *Hormone-C* helicopters, 3 Lebed air cushion landing craft



Ivan Rogov

Electronic Equipment:

Radar: 2 Don-Kay, 1 Head Net-C, 1 Owl Screech, 1 Pop Group, 2 Bass Tilt

ECM: 2 Bell Shroud, 2 Bell Squat

IFF: High Pole-B

Machinery: 2 gas turbines; 2 props; 20,000 hp

***Range: 8,000/20; 12,500/14

Complement: 200 crew and 550 troops

Footnotes

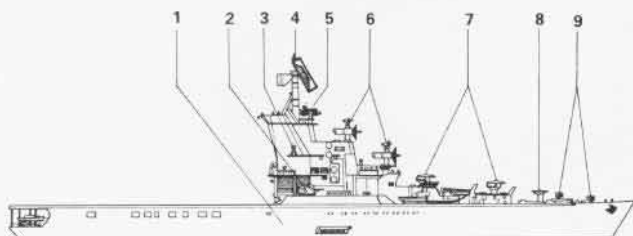
*Dimensions: Hull dimensions are given in meters as follows: length overall x beam x draft (full load unless otherwise stated).

**Armament: Number of guns/caliber; or number of torpedo tubes or launchers with caliber. Figures in parentheses show the number of mounts and whether they are single, double, triple, etc., e.g., (III x 2) indicates 2 triple mounts.

***Range: Cited in nautical miles at a given speed. ■



Moskva

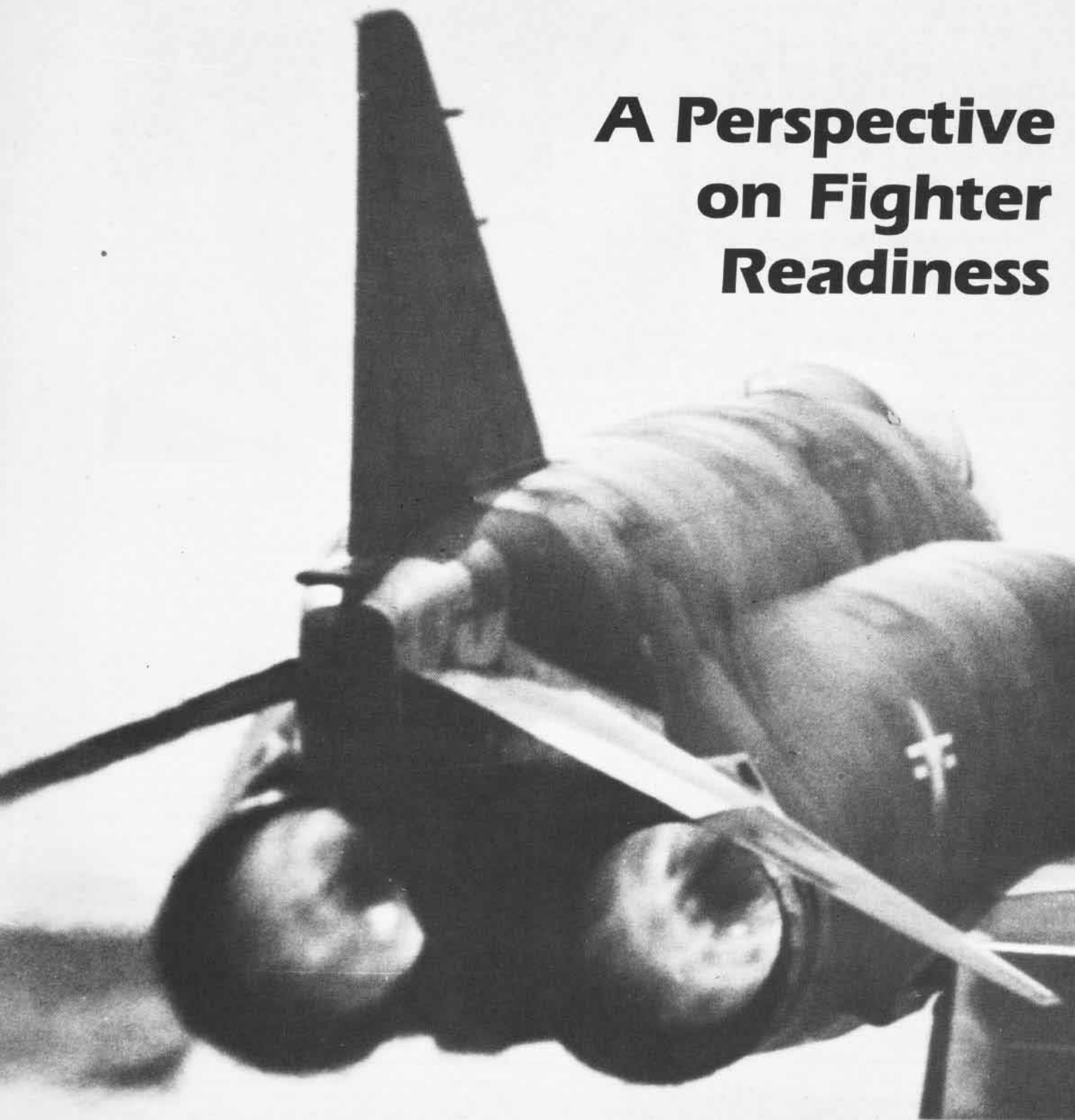


L. Gassier

Moskva—1. Former torpedo tube location 2. Twin 57mm AA 3. Muff Cob radar gunfire-control director 4. Top Sail 3-D air-search radar 5. Head Net-C air-search radar 6. Head Lights 7. Twin SA-N-3 missile launchers 8. Twin SUW-N-1 ASW rocket launcher 9. RBU-6000 ASW rocket launchers

NAnews is grateful to the United States Naval Institute for supplying Soviet naval ship and aircraft specifications, and the detailed line drawings of the *Kiev*-class aircraft carrier and *Moskva*-class helicopter cruiser. All information is from *Combat Fleets of the World 1984/85*, edited by Jean Labayle Couhat. Copyright © 1984, U.S. Naval Institute, Annapolis, Md. To facilitate reading, metric measures have been converted to customary U.S. measures.

A Perspective on Fighter Readiness



With afterburners aglow, an F-4 Phantom takes off.

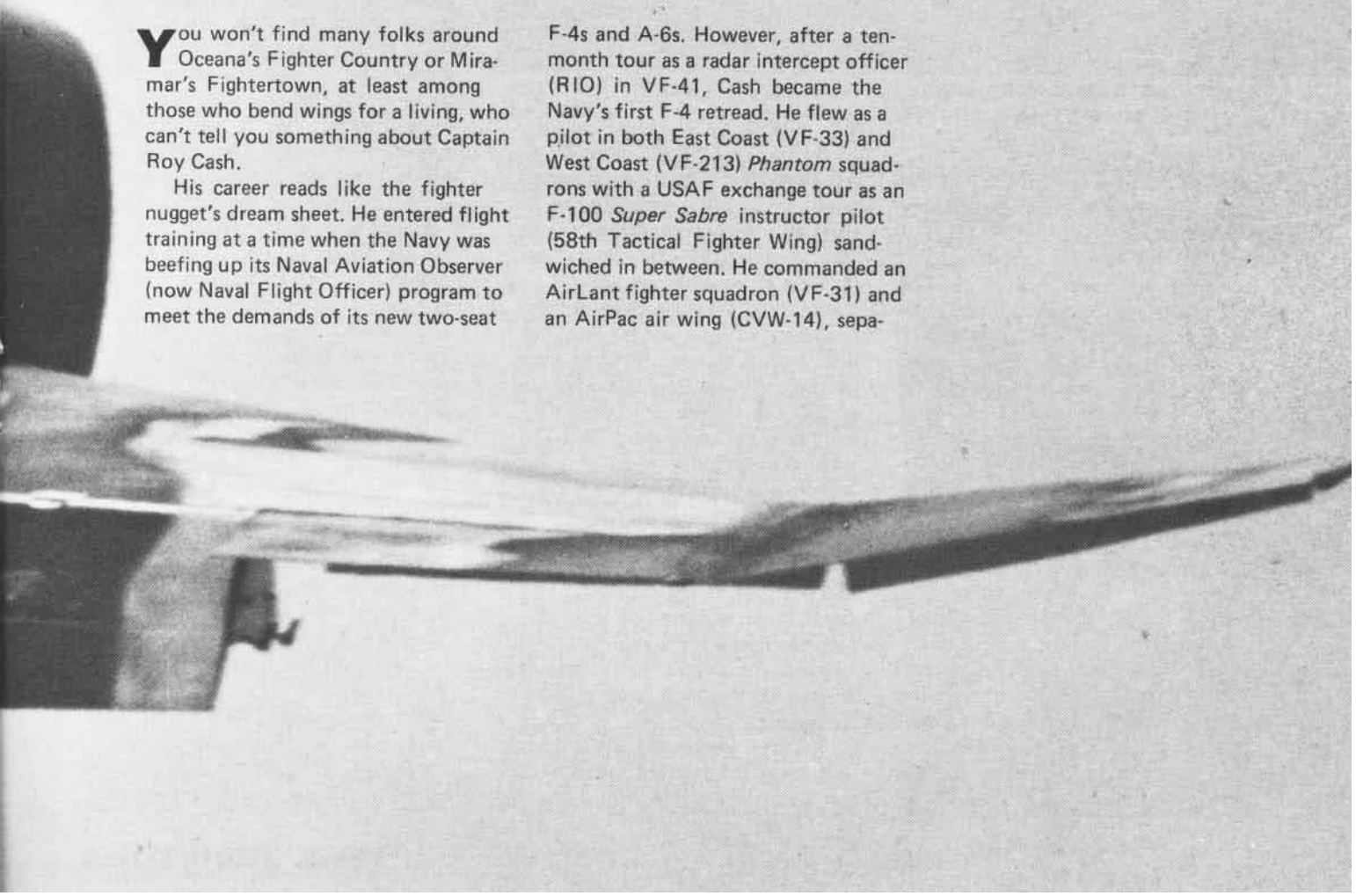
A Top Cat Grooms His Tigers

By Lieutenant Commander Bob Frantz, USNR-R

You won't find many folks around Oceana's Fighter Country or Miramar's Fightertown, at least among those who bend wings for a living, who can't tell you something about Captain Roy Cash.

His career reads like the fighter nugget's dream sheet. He entered flight training at a time when the Navy was beefing up its Naval Aviation Observer (now Naval Flight Officer) program to meet the demands of its new two-seat

F-4s and A-6s. However, after a ten-month tour as a radar intercept officer (RIO) in VF-41, Cash became the Navy's first F-4 retread. He flew as a pilot in both East Coast (VF-33) and West Coast (VF-213) *Phantom* squadrons with a USAF exchange tour as an F-100 *Super Sabre* instructor pilot (58th Tactical Fighter Wing) sandwiched in between. He commanded an AirLant fighter squadron (VF-31) and an AirPac air wing (CVW-14), sepa-





Capt. Cash explains proper maneuver techniques to his flight prior to takeoff.

rated by a tour as commanding officer of Top Gun, the Navy's Fighter Weapons School.

Looking forward to a deep draft command sometime next year, he calls his present challenge as commander of Fighter Wing 1 at NAS Oceana "the last day-to-day fighter job and best flying job in the Navy after command of an air wing." He is in the position of being able to make a contribution to maximum fighter readiness by teaching not only what he has learned through training but also by being in the heart of the fight during the Vietnam War when Navy fighter effectiveness zoomed from a 2.5-to-1 kill ratio early in the war to 13-to-1 by 1972.

On July 10, 1968, Lt. Cash with about 30 combat missions behind him and 500 hours in the F-4 (plus another 400 in the backseat), together with his RIO Lieutenant Junior Grade Ed Kain, became the first AirLant crew to down a MiG. Cash explains, "We were in a

VF-33 section 15 to 20 miles east of Vinh, flying off *America*, when we received a hot vector from *Horne* [CT-30, then DLG-30]. We had two MiG-21s in front of us at about 4,500 feet. I fired the first salvo of two *Sparrows*, which I learned later did little except to alert them to our presence. Almost simultaneously with an E-2 call, 'Heads up, two blue bandits West,' two more MiG-21s popped out of the weeds. They had been low enough to escape *Horne's* radar.

The fight lasted less than a minute and a half but, because of the anxiety and emotion of the moment, I will never forget any one of those 87 seconds. It was nothing like anything I've ever encountered in flying prior to it or since. Nothing could compare in intensity.

"After a couple of turns and a roll outside, I maneuvered into position for a good *Sidewinder* shot. I saw their

flight leader's aircraft explode and was rather relieved to see the pilot in a parachute. I didn't want to kill the guy. I felt I had accomplished my mission by rendering his machine impotent to fight again. The other three MiGs left the fight at that point." It was later learned that the destroyed MiG-21 was flown by an NVAF lieutenant colonel with several American kills. Cash was awarded the Silver Star for his success.

Capt. Cash feels that had the F-4 crews had the benefits of the training that today's crews receive, the engagement would have resulted in two, possibly three, MiG-21 kills.

"In 1968 there was still little air combat maneuvering (ACM) training. The replacement air group (RAG) squadrons had no formalized syllabus and Top Gun was not yet established. ACM in the *Phantom* was in its embryonic stage. The thinking in the F-4 community had been that with the *Phantom's* head-on capability 'we'd shoot the bogey before he was ever aware of our presence.' We trained more for the intercept than for the engagement. Vietnam taught us, because of the frequent need for visual identification, that it was often necessary to engage. That meant we had to know tactics and our weapons systems, as well as the tactics and weapons systems that would be employed against us. Had I been a lieutenant with *today's* training, I would not have fired the *Sparrows* when I did. I wasted two missiles. I would have known from my training to wait until I was more fully in the envelope before firing."

On a personal level, the veteran fighter pilot with more than 300 combat missions, 4,000 jet hours and 1,200 traps encourages crews "to get to know each other as well as possible. Train together, fly together, work together and play together. Know how each other thinks. The objective is to fight as one."

Cash calls the lieutenant fighter pilot or RIO "the best stage in life for anybody to be." He explains, "At that point, you're ambitious, highly motivated, and have lots of energy and drive. You have enough experience

to prosecute the mission, but you're eager to learn and not so cocky from your acquired experience that you think you know it all. It's still early enough in your career that you can concentrate on flying without being saddled with the responsibilities of rank."

It is interesting to note that Cash, a 1962 Memphis State University graduate with an English and Theatre major, feels that technically educated people generally make the best fighter crew candidates. The fighter wing commander feels that "engineering, math, physics, computer science and related disciplines give you the edge."

"Fighter aviation is more than just flying. I could probably teach my mother to fly, but she wouldn't make a good fighter pilot. The best ACM driver isn't necessarily the best stick and throttle aviator. It's assumed he has excellent motor skills when he gets wings and certainly when he gets fighters. Those who excel understand complex systems and how to employ those systems, and can effectively analyze dynamic relationships in the air."

He describes the wing's mission as *training*. "It is my job to ensure that our squadrons preparing for extended deployments have the opportunity to take advantage of the maximum amount and quality of training possible. That includes everything from instruments to field carrier landing practice (FCLP), low-level ops, ordnance delivery, electronic warfare (EW) and, of course, ACM. Facilities, scheduling and funding are not limited to operations at Oceana either. Frequently, squadrons or detachments are deployed to or from Key West, Roosevelt Roads, Fallon, Miramar and Nellis Air Force Base, as well as other USMC and USAF fighter bases in the United States."

Among the wealth of training opportunities the wing encourages its squadrons to take advantage of is the Fleet Fighter ACM Readiness Program (FFARP). Conducted by VF-43, FFARP is a 17-working-day air combat training period when the fleet squadron pits its F-14s against adversary F-5s, T-38s and A-4s. The pro-

gram, begun at Oceana, is conducted for West Coast squadrons by VF-126 at Miramar.

A quarterly sea battle exercise, *Seabat*, coordinated by the FitWing staff, is an intensive, four-day, joint service, war-at-sea, electronic warfare exercise which utilizes electronic countermeasures (ECM) aircraft, early warning aircraft and strategic bombers, as well as fighters. The FitWing also coordinates scheduling for VC-12, a reserve composite squadron which uses its A-4s for adversary services to the wing's squadrons and other units. VC-12, like VF-43, provides F-14 crews an opportunity to train against a dissimilar bogey.

Squadrons are urged to send at least one crew to Top Gun at NAS Miramar during each turnaround. In this graduate level program aimed at the top fighter crews in each fleet squadron, students not only learn weapons and tactics, but substantial emphasis is placed on briefing and teaching techniques as well. The program is designed so that these nucleus crews will return to their parent commands and train the remainder of their squadrons.

Top Gun also deploys two detachments to Oceana, one for a one-week Fleet Air Superiority Training (FAST) course and the other for dissimilar adversary training, using their F-5s and A-4s. FAST is a non-flying, EW-oriented, maritime, air superiority course which utilizes simulators extensively to accomplish its mission.

Additionally, Fighter Wing 1 coordinates and encourages Oceana F-14 squadrons to take advantage of ACM training on its nearby Tactical Aircrew Combat Training Systems (TACTS) range against USAF F-15s and F-16s; participate in orange air operations where squadrons and air wings go to war against each other; and, when at the peak of readiness, participate in joint service *Red Flag* combat scenario exercises at Nellis Air Force Base, Nevada.

Capt. Cash urges squadron commanders to utilize every training opportunity available. For example, he feels "a squadron needs FFARP in the same way it needs field carrier

landing practice or carrier qualification to promote mission effectiveness. FFARP is integral, not optional. Every time a plane launches, it must have some element of training — some training goals and objectives planned." The veteran combat pilot considers *Red Flag* as the premier exercise for testing combat readiness. He calls it "as close to combat as anything since combat, and the best training package in the world. It is very demanding and very unforgiving. It is combat without shooting and killing people, combat without the bottom line. Because of its demands, no squadron should go to *Red Flag* without an intensive ACM and low-level operations workup immediately beforehand. I would consider the fleet fighter ACM readiness program a prerequisite. This is just not the kind of thing you go to immediately upon returning from leave."

The wing commander views the use of simulators, as "absolutely required for today's training requirements and complex aircraft. The simulator allows you to make mistakes at minimal cost. Of course, simulators cannot duplicate real flight conditions, weapons expenditure, carrier landings, etc. It's

Capt. Cash prepares for another flight.



simulation only."

Similar ACM, F-14 against F-14, where an aircraft has the same flight characteristics and potential, and the success variable becomes the skill of the crew, is an area that Cash feels must be managed judiciously. He advises, "Keep it from becoming man versus man or pride versus pride. Where possible, it should be limited to orientation and indoctrination. Use it to demonstrate the employment of tactics or to show a single facet as opposed to going out to kill the bogey. An engagement that degrades into a low energy, low airspeed, rolling or horizontal scissors does no one much good. It shouldn't be like Dodge City. The objective shouldn't be to see who can shoot whom but to show how it's done."

"In dissimilar ACM, as in the FFARP syllabus, where each aircraft has inherent strengths and weaknesses, the bogey should intentionally give something away early in the training — do something wrong to see if the fighters capitalize on it. As the training progresses, the bogey gives away less and less, and by the end of the syllabus the bogey should maximize his performance and capabilities."

Anyone who has spent any time around Navy fighter crews, particularly since the inception of Top Gun, quickly realizes that call signs have on many occasions replaced names as the primary method of identifying people. Marty, Lenny and Dan have given way to Streak, Toado and Bad in the airplane, ready room and at the club. Capt. Cash, call sign Outlaw, has mixed feelings about their use. "They have tactical benefits during ACM. It is a lot easier to call 'Joe Dog check Six, than Falcon Two Zero Three dash One check Six.' The problem occurs when they lend too strong an identity and reputation to the individual. It is important to keep the *who* out of intensive ACM training. What is important is not who shot whom but what tactics are employed and what is learned."

There is little sacrifice of aggressiveness and there are few artificial limitations for the sake of safety in Navy fighter training. The FitWing commander explains, "We train to the limit of the aircrew and the vehicle. There is a natural margin or departure point. To go beyond that violates safety and puts the crew in an out-of-control mode. If not in control, the

crew is vulnerable. Therefore, it is a common sense limitation.

"We don't train ACM below 5,000 feet because it leaves no margin for error. If you have a departure [from controlled flight] below 5,000, you have to give the airplane away. You've got to get out immediately. There's no time to effect a recovery. So, we make 5,000 feet the *ground*, and the survival instinct and discipline keep us above that simulated *floor*. Safety equals professionalism."

With over 3,500 hours, more than 1,000 of his 1,200 traps and all his combat missions in the F-4, Cash has a special place in his heart for the *Phantom*. He is quick to note that "April 1, 1984, was the twentieth anniversary of my first hop in the F-4, and June 15 the twentieth anniversary of my first trap. As far as I'm concerned, only two aircraft fall into the category of the word 'venerable' — the DC-3 and the F-4. The DC-3 is still flying after more than 40 years, and F-4s are still being flown by more Free World fighter forces than any aircraft in the history of combat aviation."

This fighter pilot's feelings about his airplane are expressed in an Ernest Hemingway quote he keeps on his desk: "You love a lot of things if you live around them. But there isn't any woman and there isn't any horse, not any before nor after, that is as lovely as a great airplane. And men who love them are faithful to them even though they leave them for others. Man has one virginity to lose in fighters and, if it is a lovely airplane he loses it to, there is where his heart will forever be."

As long as Top Cats like Roy Cash are around, the Tigers in the fleet squadrons out on the line can rest assured that their needs and interests are being well represented by those who live and love the fighter business. ■



Capt. Roy Cash poses for a photograph in front of an F-4 Phantom, an aircraft in which he has accumulated more than 3,500 flying hours.

On June 15, 1984 — the twentieth anniversary of his first trap in an F-4 — Capt. Cash made his last trap in an F-4 *Phantom* of VF-171 which was disestablished on June 1.



An artist's concept of the LHD-1, the first of a new class of amphibious landing assault ships under construction for the U.S. Navy by the Litton Shipbuilding Division of Litton Industries in Pascagoula, Miss.

The LHD-LCAC Amphibious Assault Team

In an amphibious assault, the Navy-Marine combat team's mission is to establish a landing force on a hostile shore — a landing force that will, when the beachhead is secured, carry on further operations.

Construction will begin this year on the first of a new class of amphibious assault ships, the LHD-1 *Wasp*-class, which will bring together the capabilities of the two services to carry out amphibious warfare and power projection missions well into

the 21st century. To this end, the design of the LHD is a modified version of the *Tarawa*-class LHA with changes to meet new operational requirements.

A multipurpose amphibious assault ship, it is the first Navy ship designed to fully utilize the capabilities of both the AV-8B *Harrier* and the new air cushion landing craft (LCAC), and also carry a mix of the Navy's full range of helicopters and conventional landing craft.

Its primary mission is to deploy and support all elements of a Marine landing force in assault by fixed-wing aircraft, helicopters, landing craft and amphibious vehicles. In a secondary role, it can operate as a sea control ship for operations in the amphibious objective area.

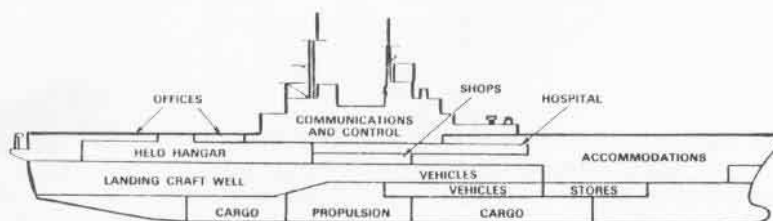
While the LHD-1 will have a hull, propulsion equipment and habitability standards similar to the LHA's, there will be several key differences. The enclosed well deck will accom-

modate three of the new air cushion landing craft, which will literally fly in and out of the ship's dry well deck. The width of the well deck has been reduced to give the LCACs a tighter fit and reduce the likelihood of damage during well deck operations. Cargo elevators will service the flight deck as well as the hangar deck. In addition, the LHD will have survivability improvements, increased medical capability and expanded command, control and communications.

Four LHDs are programmed, with a probable total of 11 to be built. Delivery of the first of the new class, USS *Wasp* (LHD-1), is scheduled for 1989.

All of the *Wasp*-class ships will be named in honor of previous famous U.S. Navy warships dating back to the American Revolution which themselves were not named for battles.

The LHDs will provide increased amphibious lift capability and will replace the aging *Iwo Jima*-class LPHs as they reach the end of their service life in the 1990s. The combination of the LHD and air cushion landing craft will be a formidable element of future amphibious landings and will provide amphibious blitzkrieg potential well into the 21st century. ■



LHD-1 Fact Sheet

Contractor: Ingalls Shipbuilding Division, Litton Industries, Pascagoula, Miss.

Length overall: 844 feet

Beam: 106 feet at the water line

Speed: Greater than 20 knots

Displacement: 40,500 tons

Aircraft: AH-1T, UH-1N, CH-46E, CH-53D, CH-53E, AV-8B and SH-60

Amphibious lift: Equivalent of 42 CH-46s (including 6 AV-8Bs)

Sea control ship: (Air Wing) 20 AV-8Bs and 4-6 SH-60s

Landing Craft: 3 air cushion landing craft (LCAC) or various conventional landing craft

Accommodations: 1,080 crew
1,870 embarked troops plus 200 surge troops

Medical capabilities: 6 operating rooms
600-bed ward

Propulsion: 2 steam boilers, 2 shafts, 70,000 shp total

Armament: 3 Close in Weapon Systems
2 Eight-cell Sea Sparrow Surface Missile System launchers
8 .50-cal. machine guns

Full array of radars, electronic and communications systems which will allow the ship to serve as a command ship for various naval operations.

LCAC

"It's just like an airplane in here," said Marine Corps Commandant General Paul X. Kelley, as he handled the joystick at the LCAC's controls, which are more like those of a jet than the old landing craft it will replace.



The air cushion landing craft (LCAC) is the first significant improvement in waterborne landing craft since WW II. It ushers in a new era in amphibious operations in which the Marines will launch all airborne assaults from ships lying over the horizon 15 to 20 nautical miles at sea. Helicopters including the Corp's new CH-53E will fly to inland objectives with infantry artillery and antitank forces. The LCAC will land the heavy assault forces including the new M1E1 tank. The first production unit was rolled out at the Bell Helter, Inc. facility in New Orleans on May 2, 1984. A total of twelve craft are currently being built under a Naval Sea Systems Command contract with Bell Aerospace Textron.

The LCAC, powered by four ACVO Lycoming TF-40B gas turbines, is a hovercraft that rides on a cushion of air held beneath its hull by flexible skirts around the entire craft.

Traveling at speeds in excess of 40 knots, the craft can transit obstacles up to four feet high while carrying elements of a Marine amphibious assault force from ship to dry landing zones beyond the beach. This should mean fewer Marine casualties during the landings, with troops and equipment reaching shore ready for battle.

After LCAC-1's initial checkout and builder's trials, it will undergo U.S. Navy acceptance and operational testing at the Naval Coastal System Center in Panama City, Fla., where Assault Craft Unit Five has already been established. The unit will begin training with the LCACs next year and in 1986 will move with the first six craft to an LCAC support base currently being constructed at Camp Pendleton, Calif. An East Coast support base will be established at NAB Little Creek, Va. in 1987. Each base will be home to 45 LCACs by 1994.

NANews' JOCS Kirby HARRISON

Navy Photojournalist of the YEAR

By JO2 Timothy J. Christmann

"Being a photojournalist isn't as important as breathing, but it's damn close," said NANews' Senior Chief Journalist Kirby Harrison, who was recently chosen as the Navy's Photojournalist of the Year.

By photojournalist, however, JOCS Harrison doesn't mean someone who shoots pictures only to hang on a wall, or writes stories to shove into a binder.

"A photojournalist's job is to record events and make them available to the public and generations to come," said Harrison, who likes it all — photography, writing and layout. "If you aren't doing that, you should turn in your NEC for a rocking chair."

Since graduating from a year of Navy-sponsored photojournalism training at Syracuse University in 1971, JOCS Harrison has been pursuing his

specialty with zeal. Such tireless work has enabled him to get many of his articles and photos published in a variety of professional military and civilian newspapers and magazines, including the *Washington Post*, *New York Daily News*, U.S. Naval Institute *Proceedings*, *Norfolk Ledger Star*, the *Herald Tribune* (in Paris, France), *Stars and Stripes*, *Wings of Gold* and, of course, *NANews*.

Over the years, he has received many awards citing both his writing and photography talents, but few have been as important as being selected as the Navy's 1983 Photojournalist of the Year.

Since 1969, the Chief of Information (Chinfo) has been presenting the award annually to the top photojournalist on active duty, according to Bob Carlisle, head of the Still Photo Branch (Chinfo), in Washington, D.C. Ninety



PHC Don Saltee

Above, JOCS Kirby Harrison in Beirut, Lebanon. Below, while at Commander Construction Battalion, Pacific, Harrison was able to capture the beauty of this Navy journalist's hands and eyes.

photojournalists vied for the 1983 title but JOCS Harrison, who was also chosen as a Photojournalist of the Quarter last year, earned the honor of being the Navy's best.

"The Navy Photojournalist of the Year Award recognizes the important role you played in communicating the actions, emotions, and activities of Navy men and women to the media, both internal and external," reads the award's accompanying commendation letter from Commodore Jack Garrow, Chief of Information. "Your selection was based on the quality, quantity and professionalism of your photography and journalism."

Said Carlisle, who reviewed Harrison's submissions, "His work was superb."

Although he's happy about being recognized by his peers, Harrison, who also received the 1972 Photojournalist of the Year award, takes such laurels in stride.

"Awards are fine," he said. "But after you pat yourself on the back, you'd better get back to work. Don't think of how good you are, but how much better you can be."

Kirby Harrison, 42, who lives with his wife Carol in Washington, D.C., is the kind of photojournalist who loves a good challenge. "All photojournalists



should," he remarked, "even if it means going where the action is."

For example, when the multinational peacekeeping force was in Lebanon, Harrison didn't record developments there from a safe distance miles away. Instead, he requested and received permission to visit that war-torn area, and interviewed and photographed U.S. military personnel in their dangerous environment. His assignment culminated in a 10-page feature spread in *NA News*, which gave a closer look into the daily lives of Marines and Navy personnel involved in that mission.

Harrison's reason for doing this is simple. "There are some things that are as much an emotional experience as they are a nuts-and-bolts, analytical experience," he said. "If you want to write about something, it adds to your story if you know firsthand what the people involved are feeling."

This belief has carried over into his duties of writing about and photographing practically all aspects of Naval Aviation.

For many years, Harrison felt it was important to fly aboard tactical aircraft and comprehend Naval Aviation's ultimate challenge, catapulting off an aircraft carrier. So, he completed the stringent survival and physiology requirements for flying in the backseat of Navy jets in preparation for his first catapult launch in an EA-6B *Prowler* aboard *Kennedy*.

"I remember thinking to myself, while sitting in the backseat waiting for the plane to catapult, that I was going to keep my eyes open and remember all of it," he said. "I recall looking out through the canopy and seeing the launch officer give the go signal. Suddenly, the aircraft jolted forward. I was pinned to the back of my seat. My eyeballs compressed and, less than three seconds later, the *Prowler* sped off the end of the catapult at about 160 knots. There was a moment of weightlessness as the plane left the ship. My heart was in my

throat. Then, we broke slightly to port and climbed away from *Kennedy*. The experience is more than anyone can imagine," he said. "Naval Aviators get used to it, but I can't see how."

Kirby Harrison was born in Newport News, Va., and raised there and in Dillsborough, N.C., near the "heart of the Great Smoky Mountains." He grew up with dreams of becoming an architect but, after high school, realized he lacked the talent and inclination to pursue such a goal. As a high school junior, while on the track team, he ran 10 miles in 56 minutes and harbored thoughts of someday running in the Olympics. But, an encounter with an errant 16-pound shotput and subsequent knee operations ended such hopes.

Harrison joined the Navy in 1962. He reported to his first duty station, *Springfield* (CLG-7), then the Sixth Fleet flagship home-ported in Villefranche-sur-Mer, France, as a non-designated seaman. While on board, he bought his first camera, a Yashica twin-lens reflex, because he thought it would be nice to photograph all the places he saw in the Mediterranean. He was 19 and knew nothing about photography.

Following a two-year tour aboard *Springfield*, he left the Navy but re-

mained in France working for an elevator company. Later, he returned to Newport News and was employed by the *Daily Press Times Herald* as a staff photographer.

While there, he quickly learned about the distressing features that sometimes accompany the profession.

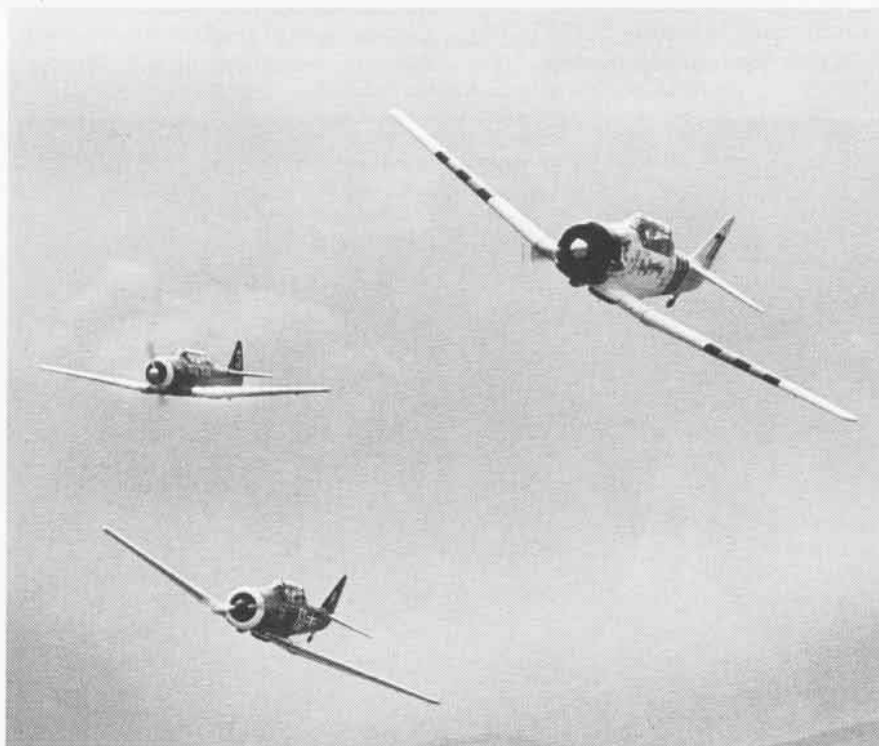
It was during an accident involving a jackknifed aviation fuel truck which had caught fire and exploded. Harrison was wading through the fire-fighting foam, camera in hand, looking for a good vantage point to shoot from, when he noticed something submerged in the bubbles. He kicked the object and saw it was part of the remains of the truck driver who had perished in the blaze.

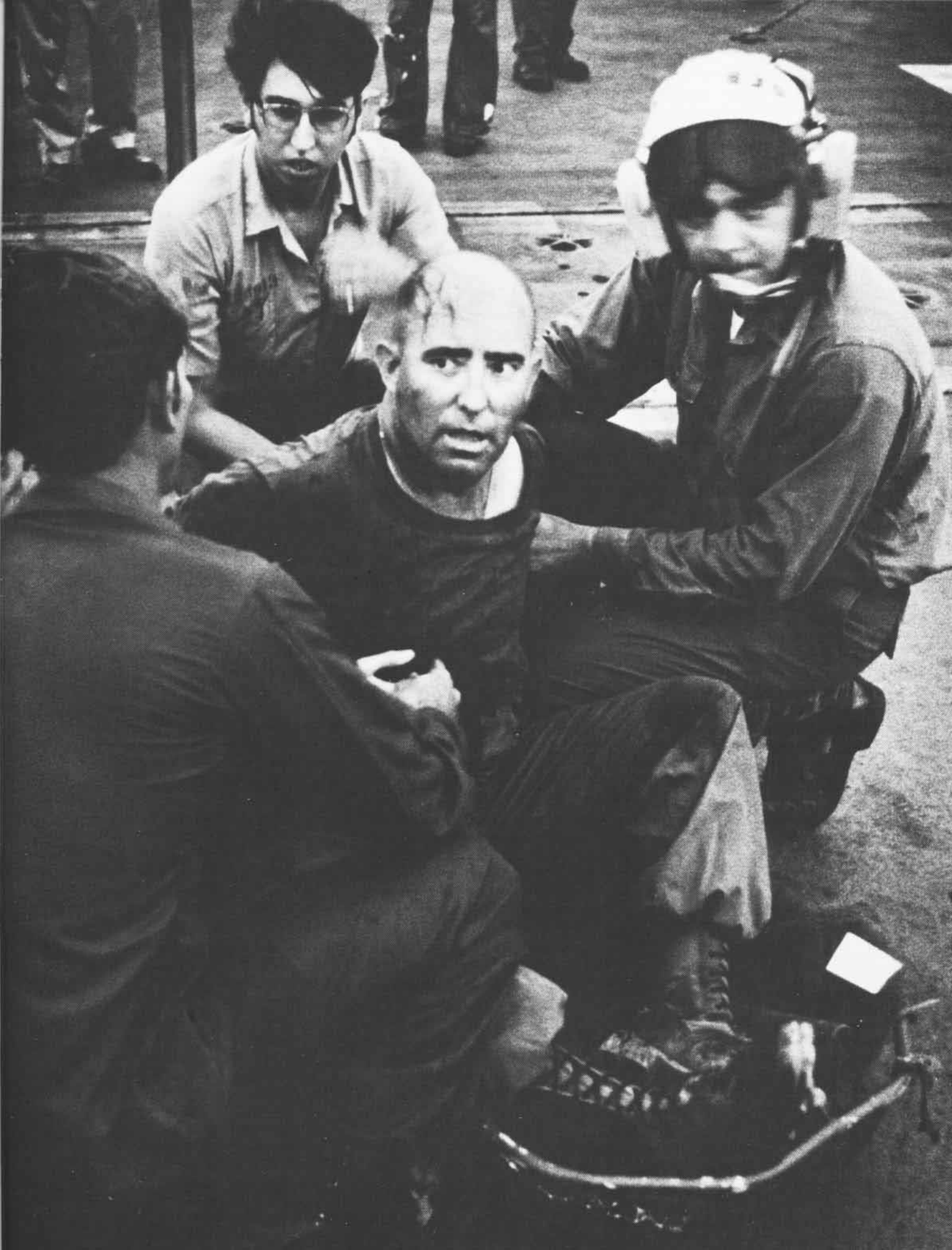
"It was the first time I ever got sick at a wreck," he said. "It's something you never get over."

After working a year with the *Press Times Herald*, Harrison returned to France to work for a photography studio. By then, he could speak French fluently. He came back into the Navy in 1967, had a tour aboard *Little Rock* (CLG-4), then the Sixth Fleet flagship home-ported in Gaeta, Italy, and later went to ComPhibLant staff at Little Creek, Va., as a journalist second class.

While at ComPhibLant, Harrison compiled a portfolio of photos and

Right, while reporting the Reno Air Races in 1982, Harrison snapped this photograph of three SNJs in flight. Opposite page, while aboard the amphibious assault ship *Guam* off Vietnam, Harrison photographed this Army sergeant, who had been wounded in action and heloed aboard. He later learned that the sergeant, who had also been wounded in WW II and Korea, recovered from his injuries.





stories he had shot and written, and submitted it to the Navy selection board for the photojournalism program at Syracuse University in New York. Members on the board were impressed with his work and in 1970 accepted him for the one-year program.

"Kirby showed he had obvious potential in photography," said Dave Wilson, then a photographer's mate first class at ComPhibLant, whom Harrison credits with helping him develop his photojournalist skills. "He had a good natural instinct. A good eye."

Wilson, a graduate of the Syracuse photojournalism program and currently a retired chief photographer's mate working as staff photographer for the Secretary of the Navy, added, "Today, he is one of the best photojournalists in the Navy."

After graduating from Syracuse, JO1 Harrison went to CinCPacFlt for four years. During this time he flew briefly as a door gunner for HC-7 in Vietnam while coordinating his photojournalism pursuits in that region, and was later involved in covering the Civic Action teams in Micronesia on such far-flung islands as Ponape, Kosrae and Truk.

"The Civic Action teams provided assistance to the islanders," said Harrison. "They built bridges, septic tanks, hospitals, etc. It was a real pleasure recording what they did."

He spent more than a month interviewing and photographing team members and islanders. His assignment culminated in stories and photo-



It never fails to please Harrison when he is able to take a "ho-hum" assignment, like a retirement ceremony, and make it into something out of the ordinary. A combination of low angle, to feature aircraft slightly out of focus in the foreground, and the happy faces on the individuals in focus resulted in a pleasing, high-morale photograph. Below, Harrison photographed this boy playing with his father's baseball hat during a game at Kirtland AFB, Albuquerque, N.M. Right, hung with rocket launchers, this Sea Harrier aboard the British carrier HMS Hermes presented a massive and deadly appearance, especially to the human figure working on the flight deck. Harrison took this photograph while on assignment aboard Hermes last year.

graphs that were published in more than 25 newspapers worldwide.

After CinCPacFlt, Harrison left active duty but stayed in the reserves and worked for the *Auburn Globe News* in Washington as a reporter and photographer. He returned to active duty in 1977 as a journalist chief petty officer, and spent three years as the public affairs officer at Commander Construction Battalion, Pacific. Following that tour, he reported to *NANews*, where he is currently associate editor.

"Some people think photography and writing are easy, but they are often emotionally draining," said JOCS Harrison, whose hobbies include woodworking and running. "It can be a very frustrating experience because there are assignments where you have to remain aware of your position as a recorder of the event, and this usually precludes your enjoying it. The enjoyment comes later in the darkroom as you see the prints come up, or in the typewriter as the words take form. Only then do you have the satisfaction of knowing someone will see the photos or read the story."

He added that although it's hard sometimes for photojournalists not to interject their opinions into photographs and stories, the best they can

strive for is an honest, accurate portrayal of what happened.

JOCS Harrison is currently in South America supervising a team of photojournalists who are covering the 25th anniversary of *Unitas*, a five-month exercise involving U.S. and South American navies. Their coverage will be displayed in a hardcover book which will be distributed to heads of state and foreign dignitaries. Harrison will assist in the photography, writing and layout of the publication.

"It's by far my most challenging assignment," he said — indeed, the icing on a cake of hundreds of assignments he's worked on during his 17 years in the Navy.

During Harrison's career, he's had a number of civilian job offers, but "few have been better than the Navy."

He added that he has friends who make four or five times the salary he makes, but few have anywhere near what he has in excitement and job satisfaction. "After all, how many of them have flown through canyons and mountain passes 50 feet off the ground at night, catapulted off a carrier flight deck, or slept on a beach on a South Pacific island," JOCS Harrison remarked. "Most people dream about such experiences. I live them." ■





PROFESSIONAL READING

By Lieutenant Commander Peter Mersky, USNR-R

Drummond, Anthony. *United States Naval Test Pilot School*. Fishergate Publishing Co., Inc., 2521 Riva Road, Annapolis, Md. 21401. 1984. 180 pp. Illustrated. \$15.25.

This heavily illustrated book covers all TPS classes, from the school's beginnings in 1945 to 1983. Several hours of enjoyable browsing are in store, as each class roster is listed together with a photograph. The reader will recognize several names, including John Glenn, Wally Schirra and Alan Shepard, among several astronauts, and Vietnam POW (later Vice Admiral) James Stockdale.

Presented in a yearbook/cruisebook style, this volume is a well detailed history of the grueling yet rewarding grind each class has gone through, including an interesting appendix showing TPS curricula for 1950, 1964, 1973 and 1982. The reader will also get a good idea of the various aircraft which the school has used.

Kilduff, Peter. *Douglas A-4 Skyhawk*. Osprey Publishing Ltd. Distributed by Motorbooks International, P.O. Box 2, Osceola, Wisc. 54020. 1983. 198 pp. Illustrated. Indexed. \$19.95.

Though not the final word on the long-lived A-4, this well-illustrated volume shows the ubiquitous little *Scooter* in its varied career, in several national colors and roles. Beginning, naturally, with the design of the A-4, through its introduction to the fleet and its colorful combat service in Vietnam, Kilduff's book is a good nostalgic browse. Of particular interest is his discovering an A-4 pilot who was awarded the Medal of Honor, albeit posthumously, thereby adding another name to those of two other Naval Aviators who received the medal for actions directly related to Vietnam aerial combat.

The *Skyhawk's* foreign service is covered, although to a lesser degree than its U.S. contribution. There are good photos of Australian, New Zealand and Argentinian aircraft, as well as those of the *Blue Angels* and U.S. Naval Air Training Command. The book ends with several appendices detailing the differences in the long *Skyhawk* line. All in all, an easy-to-read, nicely researched volume on one of the most important post-WW II aircraft.

Mason, Francis K. *Phantom: A Legend in Its Own Time*. Patrick Stephens Ltd. Distributed by Motorbooks International, P.O. Box 2, Osceola, Wisc. 54020. 1984. 192 pp. Illustrated. \$16.95. Perhaps the best known military aircraft of the post-Korean War period, the big ugly-beautiful *Phantom* has been the subject of many articles, books and even artwork. This volume, generally, is a good history of the *Phantom* line, with a reasonable selection of photographs. Francis Mason's reputation is well established and he is also an accomplished technical illustrator; his side elevations of various aircraft always complement his books. In general, this volume is of particular value to the mid-level enthusiast.

Tidman, Keith R. *The Operations Evaluation Group: A History of Naval Operations Analysis*. U.S. Naval Institute, Annapolis, Md. 21402. 1984. 359 pp. Illustrated. Indexed. \$24.95.

Formed in April 1942, the Operational Evaluation Group, although little known outside the inner circle of Navy policymakers, has been in the forefront of such activity for over 40 years. This book can best be described as a research tool. Heavily illustrated, with some interesting tabular data and maps, it carries the history of OEG and U.S. Navy operations analysis through WW II, Korea and Vietnam. The last period is very interesting and touches on several points concerning that period of U.S. military operations. The subject of North Vietnam's supply lines from China, which gave rise to such large undertakings as *Operations Market Time* and *Game Warden*, as well as the conduct of the air war, is well detailed. It is in these

areas that this book has its greatest overall interest and value. It is an important and worthwhile addition to military research literature.

Moyes, Philip J. R., *Modern U.S. Fighters, Volume 1. Squadron/Signal Publications*, 1115 Crowley Drive, Carrollton, Texas 75006. 1982. 120 pp. Illustrated. \$9.95.

The six fighter aircraft detailed in this book present a rather odd combination of very new and very old designs. The oldest is the North American F-100, while the newest is the F-16. In between are the F-104, F-4, F-14 and F-15.

This is a handy little book for quick reference regarding development and initial service details. There are also well-done line drawings, as well as cockpit details. The F-104, and to a lesser extent the F-100, has served not only the U.S. Air Force, but several other NATO nations and, in the case of the F-104, Nationalist China and Japan. The *Phantom* has had perhaps the most successful career of any post-WW II military aircraft, and its combat record is second to none.

It is safe to say that there is something for everyone in this volume, and it deserves a look.

Davis, Larry. *Air War Over Korea: A Pictorial Record*. Squadron/Signal Publications. 1115 Crowley Drive, Carrollton, Texas 75011. 1982. 96 pp. Illustrated. \$8.95.

This is a fine book, well researched and illustrated with many new photographs, both color and black and white, and with maps and well-done color profiles.

The book is slanted towards the U.S. Air Force but the U.S. Navy and Marine Corps pages and color profiles in the back of the book are informative and worthwhile.

There are sections devoted to several United Nations units, especially the Royal Air Force No. 77 Squadron which flew *Meteor* jet fighters with limited success, as well as odd U.S. units such as reconnaissance and airlift squadrons. For the aspiring modeler, the color profiles of T-6 "Mosquitos" and B-26 *Invaders* are worth the price of the book.

Drendel, Lou. *SR-71 Blackbird In Action*. Squadron/Signal Publications, 1115 Crowley Drive, Carrollton, Texas 75011. 1982. 50 pp. Illustrated. \$4.95.

This volume, number 55 in the *In Action* series, is one of the more detailed looks at the unique, mysterious and incredible SR-71. First acknowledged in a famous 1964 press conference by President Lyndon B. Johnson, the SR-71 remains the quintessential manned reconnaissance aircraft, even 20 years after its design by Clarence L. "Kelly" Johnson and his staff at the famous "Skunk Works" division of Lockheed. Able to fly a mission at a sustained Mach 3 speed, the *Blackbird* has been the subject of more conjecture than nearly any post-WW II aircraft. While photographs of the SR-71 are no longer a rarity, details regarding its specific performance and mission are still highly classified.

This book, then, is all the more welcome, especially for the would-be *Blackbird* modeler, as it shows many detailed views of the SR-71. Understandably, there are few variations of the all-black color of the SR-71, so there are few color profiles. However, some differences in the individual tail markings and numbers are shown, as are some special unit patch designs. The development of the SR-71A and its abortive interceptor derivative, the YF-12A, is shown in line drawings.

Awards

Cdr. Harvey Fielding, C.O. of HS-15, recently received the Aviators Valor Award as 1983's best example of "heroism and superior professionalism." During the Grenada incident, an Army *Blackhawk* helo carrying Rangers was shot down in an enemy jungle area. Cdr. Fielding flew his lightly armed *Sea King* to the crash site and, while he held the helo steady in a lagoon that closed to within five feet of his blades, the crew hauled aboard some 11 Rangers, one with a life-threatening head injury. Fighting a 20-knot tail wind, Fielding brought the overloaded *Sea King* out of the water and safely aboard USS *Gum*.

The *Seahawks* of VAW-126 were awarded the ComNavAirLant Battle E as the best East Coast airborne early warning squadron in 1983, while VA-15 and VS-31 were recognized as tops in the attack and antisubmarine warfare communities, respectively.

NAS Cecil Field, Fla., beat out the competition in 1983 by winning various awards: Golden Anchor, Silver Anchor, Best Mess Award, and the Villard C. Sledge Award for jet engine repair.

AK1 Wilbert Brewer was recognized by the Navy League as the outstanding Naval Reservist at Naval Air Reserve, Point Mugu. As the unit's career counselor, he is responsible for its retention program. In civilian life, he is a financial consultant with a nonprofit organization which assists parents of terminally ill children.

VMO-1 was presented the Outstanding Achievement in Force Support and Special Mission Aviation Award by the Association of Naval Aviation, lauding the OV-10 *Bronco* squadron's perform-



HS-15 crew members flanked by Marines who provided protection during the rescue of the Army Rangers: (l-r) AW1 Keith Hill, Lt.Cdr. Gerald Carroll, Cdr. Harvey Fielding and AS3 Lawrence Bangert.

ance in 1983. Flying a variety of observation missions, including support of amphibious assault and helicopter roles, VMO-1 demonstrated its motto, "Yazoo Can Do."

Honing the Edge

Four Naval Reserve aviators from VAW-78 joined their active duty counterparts last spring aboard *Kennedy* stationed off Beirut. Cdr. William Castle, VAW-78's X.O., and Lt.Cdrs. Les Henrick, Ken Calise and Mike Walsh fitted into VAW-126's flight schedule easily because of their recent transition to the E-2C *Hawkeye*. They remained with VAW-126 for nine days, accumulating over 150 hours of combined flight time.

In keeping with the One Navy concept, personnel from Whidbey Island's VP-69 travelled to NAF Misawa, Japan, to augment the *Blue Dragons* of VP-50 in their Seventh Fleet operations. Since

the reserve squadron's primary mission is to provide ASW training to Selected Air Reservists in the event of mobilization, reserve personnel are routinely provided hands-on experience in an operational environment. The VP-69 *Totems* are commanded by Cdr. B. M. McGuiness.

Established

HS-14 became the newest helicopter squadron based at NAS North Island on July 10. Along with sister squadron HS-17 at Jacksonville, HS-14 was established to balance fleet antisubmarine warfare forces. Commanded by Cdr. James P. O'Brien, HS-14 will fly the SH-3H *Sea King*. Its primary mission is support of the carrier battle group, with additional logistics, plane guard and search and rescue duty.

Records



Lt. Doug Buchanan

When Lt.Cdr. Bob Davis and Lt. Tom Flournoy flew a VF-2 Tomcat aboard Kitty Hawk last April 2, it marked the 229,000th arrested landing aboard the carrier.

Cdr. Lewis Goen, skipper of VAW-116, recently logged his 2,000th hour of accident-free flying in the E-2C *Hawkeye*.

Awards

We have received two additions to the awards list that we ran in our July-August issue: Association of Naval Aviation's annual Outstanding Achievement Awards in the categories of Helicopter Operations, Maritime Patrol, Tactical Aviation, and Special Mission Fleet Support; and the Britannia Award to the Navy or Marine Corps student aviator who has completed advanced flight training with the highest overall weapons score. It is customarily presented by the Commander of the British Navy Staff in Washington on behalf of the Lords Commissioners of the Admiralty of the United Kingdom in appreciation of U.S. Navy assistance in training Royal Navy pilots during the Korean War.

Cdr. William H. Switzer III, commander of CVW-15, piloted a VF-51 *Tomcat* aboard *Carl Vinson's* flight deck on June 1 for the ship's 25,000th arrested landing since her commissioning a little over two years ago.

The following units recorded safe flying time: VC-12, 30,000 hours; VF-1, 6 years and 21,000 hours; VF-213, 6 years and 20,000 hours; VMFA-323, 3 years and 8,000 hours; VMGR-252, 25 years; VP-49, 22 years and 154,000 hours; VF-151, 3.5 years and 13,500 hours; HMM-163, 4.5 years and 25,000 hours; HMT-303, 10,000 hours; HS-74, 42,000 hours; HT-8, 75,000 hours; VP-93, 3 years and 10,000 hours; VMGR-252, 25 years; NAS Meridian, 14 years and 21,000 hours; VP-65 13 years and 50,000 hours; and HML-267, 14 years and 85,000 hours.

Last April, *Midway's* V-1 Division completed more than 10,500 consecutive aircraft moves on the flight deck without a scrape or crunch. "This is unprecedented," said air boss Cdr. Robert Tracy. The 42 consecutive crunch-free days on Gonzo Station in the northern Arabian Sea doubled the previous *Midway* record of three weeks.

Rescues

Lt.Cdr. Richard Powell, safety officer and transport plane commander at NAS Cecil Field, Fla., helped save a 14-year-old girl's life in February. Michelle Hiers, who lives outside Walterboro, S.C., had been waiting anxiously for a kidney to

become available. A recent transplant had failed and her doctors gave her only one week to live. Luckily, a kidney became available at Duke University and Michelle had to be transported immediately. Powell, who was at MCAS Beaufort, S.C. on business, volunteered the services of his C-1A, along with pilot Ed Fiebig and AD1 Rick Cucuzza. They flew Michelle to Raleigh-Durham, N.C., where a limosine took her to Duke University Hospital for immediate surgery. Michelle received her new kidney and is doing very well.

Et cetera

Lt. Deborah Frump recently became the first woman to be assigned as officer in charge of a seagoing helicopter detachment. She is responsible for the operation of HSL-33's HH-2F *Seasprite* det and its support role for the remote navigational aid units of the oceanographic research ship USNS *Chauvenet*, which make hydrographic surveys of the ocean floor.

Miramar's VF-21 became the newest Pacific Fleet F-14 *Tomcat* squadron on

March 15. Last November saw the retirement of its last F-4N *Phantom*, with the first *Tomcat* arriving in December. The *Freelancers* deploy aboard *Constellation* as part of CVW-14.

Signifying the end of an era in logistics support that spanned three decades, VR-24's C-1A *Trader* made its last flight on April 19, 1984. Lt.Cdr. Thomas Lull, Lt. Patricia Jedrey and AD2 Perry Pena ferried aircraft number 41 to *Kennedy* for eventual transport to VRC-40 in Norfolk, where it will fly routine missions in support of Atlantic Fleet carriers.

There is life after retirement from the Navy, according to Ron Shelly, a Naval Aviator who retired as a commander in 1979. He and his family now live on a small farm in Midland, Va., where they raise Clydesdales and Irish Wolfhounds. But his real passion is flying his Stearman, which he bought in the mid-1970s. He flew in nearby Bealeton's Flying Circus Airshow on weekends for a few years before he teamed up with civilian pilot Bill Fitzsimons in 1978 and developed a wing-walking act. In 1983, they went on the road with their old-time barnstorming routine, participating in about 35 air shows.

VFP-306 Standing Down

VFP-306, NAF Washington, is being disestablished on September 30, 1984. Anyone wishing information about the disestablishment ceremony should contact Stand-down Coordinator, Hangar 14, NAF Washington, D.C. 20390, (301) 981-3644 or autovon 858-3644.



Ron Shelly puts his Stearman through its aerobatic paces while Bill Fitzsimons walks on and hangs from the lower wing, and climbs up and down from the upper wing.

Capt. E. E. Hanson, ComPatWings-Pac Chief of Staff, recently had as his very special guest 91-year-old Mrs. Irma Sammon. The occasion was a specially arranged tour of a P-3 *Orion* of VP-31 commanded by Cdr. E. R. Enterline. For years Mrs. Sammon has sat out in her garden waiting for returning flights to Moffett, waving "a safe and happy landing" to each. The high point of her visit came when she sat in the cockpit of the P-3 with its array of complex instruments.

Midway crew members often give "royal" treatment to distinguished guests but rarely does the visitor possess the "royal majesty" of one of *Midway's* most recent VIPs, the Crown Prince of Thailand. His Royal Highness Crown Prince Maha Vajiralongkorn arrived aboard last April 30. During his tour of the carrier, the 32-year-old wing commander in the Royal Thai Air Force viewed routine air operations and a CVW-5 aerial demonstration.



PH2 Dana Howe

Prince Vajiralongkorn salutes as he is extended full honors upon his arrival.

VXE-6 and its ski-equipped LC-130 *Hercules* aircraft returned home to Point Mugu in April after a five-month "austral summer," accident-free deployment to Antarctica. Logging 3,417 flight hours, they provided Operation *Deep Freeze* airlift support for the National Science Foundation. An Antarctic first was recorded when Navy Lt. Paula Hubbard became the first polar-qualified female LC-130 aircraft commander.

In an effort to increase the inter-operational abilities of the Marine Corps and Navy, two A-7E *Corsair II* squadrons, VAs 105 and 37, will serve in the place of the usual Marine A-4 *Skyhawk* rotation squadron at MCAS Iwakuni, Japan, during the upcoming year. The Navy squadrons, commanded by Cdrs. Don Weiss and Brian Lehman, respectively, will be assigned to MAG-12, 1st MAW.

Change of Command

ASO: Como. (Select) R. K. Squibb relieved Como. J. H. Ruehlin.

AirASWing-1: Capt. James C. Roy relieved Capt. Jack B. Austin.

CAEWing-12: Capt. John R. Condon relieved Capt. James E. Connerton.

CarGru-5: RAdm. P. F. McCarthy, Jr., relieved RAdm. T. F. Brown III.

CVW-7: Cdr. Robert W. Ellis relieved Capt. Joseph W. Prueher.

CVW-9: Capt. James H. Finney relieved Capt. Austin E. Chapman.

HC-4: Cdr. James F. Scurria relieved Cdr. Ronald A. McDaniel.

HMM-162: Lt.Col. G. M. Karamovich relieved Lt.Col. L. Medlin.

HMM-164: Maj. Roger H. Dougherty relieved Lt.Col. Gordon Pirtle.

H&MS-10: Maj. J. D. McCord relieved Maj. R. V. Weidner.

H&MS-11: Lt.Col. Al Thaut relieved Lt.Col. Charles O. Hoelle, Jr.

H&MS-15: Maj. John Randell relieved Lt.Col. Stanford Sheaffer.

HMT-301: Lt.Col. W. J. Hinds, Jr., relieved Lt.Col. M. J. Williams.

HS-10: Capt. Joseph S. Walker relieved Capt. Richard Grant.

HS-11: Cdr. James A. Curtis relieved Cdr. Gerhard E. Skaar.

MACG-8: Col. John W. Spivey relieved Col. Richard S. Scibeck.

MAG-16: Col. Peter F. Angle relieved Col. Frank E. Millner.

NAF Washington, D.C.: Capt. T. M. McGraw relieved Capt. R. E. Haley.

NAR Norfolk: Capt. Earl R. Riffle relieved Capt. William M. Shewchuk.

NATTC Millington: Capt. Joe A. McElmurry relieved Capt. J. J. Shanaghan.

PatWing-1: Capt. Anthony R. Maness relieved Capt. Bobby C. Farrar.

PatWing-10: Capt. William R. Broadwell relieved Capt. Jesse J. Hernandez.

PatWingsPac: Como. O. E. Osborn relieved Como. D. J. Wolkensdorfer.

VA-27: Cdr. Hugh D. Connell II relieved Cdr. Joseph E. Hart.

VA-46: Cdr. Dean M. Hendrickson, Jr., relieved Cdr. John W. Peterson.

VA-65: Cdr. William J. Fallon relieved Cdr. Robert E. Houser.

VA-87: Cdr. Douglas G. Knappe relieved Cdr. Michael F. O'Brien.

VA-156: Cdr. Robert T. Knowles relieved Cdr. Gary C. Wasson.

VAQ-136: Cdr. Thomas J. Ford relieved Cdr. Nikolai S. Kobylk.

VF-161: Cdr. John C. Patton relieved Cdr. Robert C. Williamson.

VMAT-102: Lt.Col. J. R. Agnbroad relieved Lt.Col. T. A. Bowditch.

VMFA-323: Lt.Col. D. A. Beaufait relieved Lt.Col. G. R. Vangysel.

VMFA-531: Lt.Col. M. A. Reitsch relieved Lt.Col. J. L. Lucas.

VP-9: Cdr. Nicholas P. Burhans relieved Cdr. James C. Wyatt III.

VP-68: Cdr. James E. Batwinis relieved Cdr. William T. Gaffney.

VP-90: Cdr. Dennis J. Faulds relieved Capt. Carl K. Karlsson.

VR-60: Cdr. Charles Tucker relieved Cdr. Thomas Howard.

VQ-1: Cdr. John T. Mitchell relieved Cdr. Ivan E. Hughes.

VT-3: Lt.Col. William C. Henning relieved Cdr. Manfred Karlisch.

VX-1: Capt. Ralph H. Stowell, Jr., relieved Capt. J. A. Mason.

VXE-6: Cdr. Dwight D. Fisher relieved Cdr. Matthew J. Radigan.

VX-4: Capt. R. M. Vance relieved Capt. J. M. Welch.

FLIGHT BAG

Precise Time

The most accurate time in the world became available for public use on October 28, 1983. With the Bell System divestiture and the subsequent elimination of time services by some local telephone companies, the Naval Observatory recognized an important need. The Master Clock maintained by the Observatory provides the national time standard. A recording gives a voice announcement of the time. Through a service provided by AT&T Communications, the entire U.S. and select countries can access the Master Clock by dialing 1-900-410-TIME and obtain the most precise time available. A constant ticking in the background allows scientific users to synchronize equipment. Callers will be charged on a pay-as-you-call basis. \$.50 for the first minute, \$.35 for each additional minute.

Naval Aviation Wings

I enjoyed your article "Naval Aviation Wings," which appeared in the March-April 1984 issue. I am curious about the significance of the "foul anchor" on some of the wings. Perhaps one of your readers can shed light on the subject.

R. W. Slater
3311 Gulfstream Lane
Marietta, GA 30062

Ed's note: When we did the research for that article, we could find no explanation for the use of a foul anchor. Could be that it's simply a Navy tradition. We found the following under the definition of a foul anchor in *Naval Ceremonies, Customs, and Traditions*, published by the Naval Institute Press, 1980: "...The symbol is found in various Admiralty and Navy crests. ...on the cap badge of the American naval officer, the collar of the midshipman, and the buttons and cap badges of the British officer. It was the badge of Lord Howard of Effingham in 1601, when he was Lord High Admiral, and was used first in this connection as a naval seal."

Information Wanted

We are trying to locate survivors of the March 10, 1942, raid on Lae and Salamaua by *Lexington* and *Yorktown*, in hope of compiling a complete history of this quite historic and unique action in WW II.

Aviation, Maritime and War Branch
National Museum
Box 2556, Boroko
Papua, New Guinea

Wanted

I am a collector of military insignia and am seeking the opportunity to trade and/or buy squadron, group and wing patches to expand my collection. Of particular interest are patches from units that served in Lebanon, Grenada or in Vietnam.

Michael Pell
8261 Blackburn #C
Los Angeles, CA 90048

I am a fan of *Naval Aviation News* and am very interested in U.S. Naval Aviation. I would be grateful to anyone who would send me color photos, drawings or postcards from A-7, F-14 and F-4 squadrons.

Fermin Luis Gil
Diaz Colodrero 3364
1431 Cap. Federal, Argentina

Correction: In the listing of "Awards" which appeared on pages 34-36, *NANews*, July-August 1984, the Recipients and Criteria for the Silver Falcon should have read: "The senior Navy or Marine Corps Reserve Naval Aviator or Naval Flight Officer."

VFA-106

As stated in *NANews*, May-June 1984, VFA-106 was established April 27 at NAS Cecil Field and will be the East Coast fleet replacement squadron for the F/A-18 *Hornet*. The squadron traces its history to VBF-17, VF-6B, VF-62 and VA-106. We are trying to locate any old photos of *Gladiators* and *Gladiator* aircraft to adorn the walls of our brand new hangar. All photos will be copied and returned undamaged.

Lt. Timothy A. White
VFA-106, Box 173
NAS Cecil Field, FL 32215

A-7 Book

I am writing a book on the A-7 *Corsair II* which will contain a special section on combat operations against North Vietnam on May 10, 1972. Urgently needed are anecdotes, reminiscences, photos or color slides of this action. All material lent will be well cared for and promptly returned.

Robert F. Dorr
American Embassy
Box 40
FPO New York 09510

Information Needed

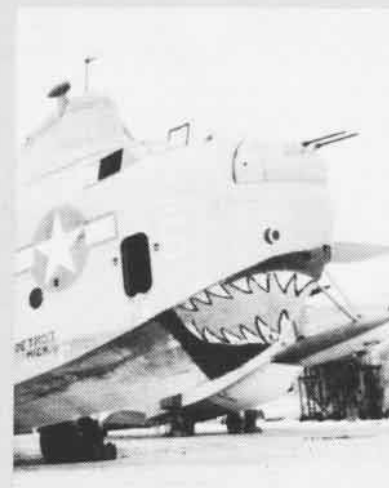
I am writing an article about my uncle, Ens. Wendell Schurse Harrington, USNR, #354886, who was killed in action over Okinawa on March 28, 1945. He was attached to Photo Recon Unit #3, Air Group 17, flying off USS *Hornet* (CV-12). He was participating in a bombing and strafing run and was photographing beach installations when his F6F-5P *Hellcat* collided with an F6F-5E piloted by Cdr. C. L. Crommelin. Both planes went into the sea off Chinen Saki on the southwest coast of Okinawa. There were no survivors.

Ten years later in August 1955, after an Okinawan fisherman snagged his nets on the wreckage, my uncle's plane, serial #71768, was recovered. His remains, remarkably preserved, were sent home for burial.

I would appreciate hearing from anyone who can give me any information about Ens. Harrington during his naval career or about Cdr. Crommelin, and also any information about the collision and the recovery of the plane.

Harold E. Wilson, Jr.
4092 Virginia Circle East
Columbus, OH 43213

PBM Mariner



I don't believe many realize that the Martin PBM equipped more squadrons than any other aircraft at the height of the buildup in 1945. Enclosed is a photo of my PBM-3D *Mariner* on the ramp on Saipan on Thanksgiving Day 1944 — with a shark's mouth. That trademark of the Curtiss P-40s had always impressed me, so I asked one of our airmen to give our *Mariner* a shark's mouth. I am enjoying my subscription to *NANews*.

Bob Smith
6468 W. 85th Place
Los Angeles, CA 90045

Doing the Job Safely

The past three years of my 13 years of active duty have been directly connected with quality assurance and/or safety. After reading the headline on page 8 in your March-April 1984 issue and then looking at the picture below it, I wondered about the safety aspect of a job. I'm referring to the article entitled "Backbone of the Squadron."

I know there is a lot of hustle and plenty of dedication and flexibility just to get the planes up and in the air. But what about the guy who was doing all the hustling? The photo shows no goggles/face shield, no rubber apron and no rubber gloves — all required safety equipment for handling acid core batteries. He could have ended up with his hands, chest, face and possibly eyes burned. A job done safely and correctly is a job done well.

AD1 Leonard D. Schoonover
Quality Assurance, OMD
NAS Cecil Field, FL 32215

Ed's note: We appreciate the help of our readers to keep us on our toes. We thought we had a winner when the photo was selected with everyone wearing ear protectors and safety shoes, and hats off, and the aircraft and tool box properly secured. We didn't realize the aviation structural mechanic was carrying an acid core battery. Thanks for bringing it to our attention and the positive suggestion for doing the job right.

SAR Pipeline

I commend *NavAirNews* for a fine pair of articles in its March-April 1984 issue. Assignment to the Navy's Search and Rescue Program is the most challenging and demanding aircrew assignment I can think of. Credit is due to the people who were, and some still are, instrumental in making the program what it is today.

The SAR Model Manager office at HC-16 long had the task of making people aware of the SAR community as a necessary and viable NEC (8215). With initial growing pains past, that office spends many man-hours in R&D of new equipment, fielding related fleet problems, maintaining rescue reports and generally watchdogging the Navy SAR program. By virtue of their efforts, the SAR community is a well-equipped, lifesaving organization. The HS-1 and HC-1 SAR swim schools are providing the highest quality professional SAR swimmers to the fleet. And I am not forgetting the Naval Aircrewman Candidate School which not only provides the basic aircrew training but is also a weeding-out process since only the strong survive.

Bill "Red Dogg" Moss,
8215 (circa 1968)
ADCS (NAC)
NAS Agana, Guam

Navy Ace

I enjoyed the F4U U-Birds feature in the July-August issue of *NANews*. One *Corsair* milestone was overlooked. An F4U-5N (night fighter) was the mount of the Navy's only Korean War ace, Lt. G. P. Bordelon. He was also the only night fighter ace and the only ace to fly a propeller-driven aircraft of the Korean War.

Lt. Cam Martin, USN
1540 Bridal Creek Rd.
Virginia Beach, VA 23464

Bicentennial Aircraft

I am researching a book on U.S. bicentennial aircraft. I need information on all marked aircraft, including helicopters, fighters, transports, etc. Any items will be credited to the originator. All materials lent to me will be copied and returned immediately. I am also willing to purchase any photographs or drawings.

MCpl John Bradley
4 MP PL, CFPO 5000
Belleville, Ontario
Canada KOK 3R0

Reunions, Conferences, etc.

USS Hancock (CV/CVA-19) reunion, Sept. 26-30, 1984, Sheraton Charleston Hotel, Charleston, S.C. Write Ed Orchowski, 5427 Bossart St., Pittsburgh, PA 15206.

USS Langley (CVL-27) reunion, Sept. 28-30, 1984, Philadelphia, Pa. Contact A. Nick Chagaris, 11 Bourn Ave., Hampton, NH 03842, (603) 926-7545.

Taffy 3 (all ships of Battle of Leyte Gulf) reunion, Oct. 25-27, 1984, Patriots Point, Charleston Harbor, S.C. Contact Heritage, 840 Colorado Ave., S., Minneapolis, MN 55416, (612) 545-5595.

NARTU Anacostia reunion, Oct. 6, 1984, Jacksonville, Fla. For details, write C. C. Rexroad, 7137 Mayapple Rd., Jacksonville, FL 32211.

Western Michigan University Alumni Assoc. will host a reunion for personnel stationed on the campus during WW II in conjunction with the V-12 Marine Aviator and V-5 Naval Aviator training programs, Aug. 17-19, 1984, Kalamazoo, Mich. Direct inquiries to the WMU Alumni Relations Office, Kalamazoo, MI 49008, (616) 383-6160.

Naval Air Transport Squadron, Inc. reunion, Sept. 3-7, 1984, San Diego, Calif. Contact Capt. Arnie Hudnall, 9807 N.W. 75th St., Kansas City, MO 64153.

Stearman Enthusiasts

The thirteenth annual National Stearman Fly-In will be held at the Galesburg, Ill., municipal airport, September 5-9. This is the event of the year for Stearman aficionados and a number of these venerable biplanes bearing U.S. Navy colors and markings are expected. For more information, contact Ted McCullough, 2310 Monmouth Blvd., Galesburg, IL 61401, (309) 342-2298.

Oral History Collection

A valuable resource for historians in the field of Naval Aviation is the U.S. Naval Institute's oral history collection. There are some 140 bound volumes of transcripts in the collection, copies of which are on file at the Institute, the Naval Historical Center in the Washington Navy Yard, and at the Naval Academy's Nimitz Library. Though almost all of the volumes discuss Naval Aviation to some degree, the following memoirs of Naval Aviators should be particularly useful to the researchers in the field:

Adm. George W. Anderson, Jr., USN(Ret.)
VAdm. Gerald F. Bogan, USN(Ret.)
Adm. Harry D. Felt, USN(Ret.)
RAdm. Daniel V. Gallery, USN(Ret.)
Adm. Charles D. Griffin, USN(Ret.)
RAdm. Thomas J. Hamilton, USN(Ret.)
VAdm. Truman J. Hedding, USN(Ret.)
VAdm. Andrew M. Jackson, Jr., USN(Ret.)
Adm. Roy L. Johnson, USN(Ret.)
Capt. Stephen Jurika, Jr., USN(Ret.)
VAdm. Fitzhugh Lee, USN(Ret.)
Adm. David L. McDonald, USN(Ret.)
Cdr. Charles M. Melhorn, USN(Ret.)
VAdm. Gerald E. Miller, USN(Ret.)
VAdm. Henry L. Miller, USN(Ret.)
VAdm. Charles S. Minter, Jr., USN(Ret.)
Adm. Thomas H. Moorer, USN(Ret.)
Capt. James R. Odgen, USN(Ret.)
VAdm. Robert B. Pirie, USN(Ret.)
Prisoners of War
Capt. John H. Fellows, USN(Ret.)
Capt. Richard A. Stratton, USN
RAdm. Jeremiah A. Denton, Jr., USN(Ret.)
Cdr. Everett Alvarez, Jr., USN(Ret.)
RAdm. Arthur W. Price, Jr., USN(Ret.)
VAdm. Herbert D. Riley, USN(Ret.)
Adm. James S. Russell, USN(Ret.)
RAdm. Malcolm F. Schoeffel, USN(Ret.)
Adm. U.S. Grant Sharp, Jr., USN(Ret.)
VAdm. Bernard M. Streat, USN(Ret.)
VAdm. Paul D. Stroop, USN(Ret.)
Adm. John S. Thach, USN(Ret.)
RAdm. George Van Deurs, USN(Ret.)

Copies of the 1983 oral history catalog are available for \$2 from the Oral History Dept., U.S. Naval Institute, Annapolis, Md. 21402.

